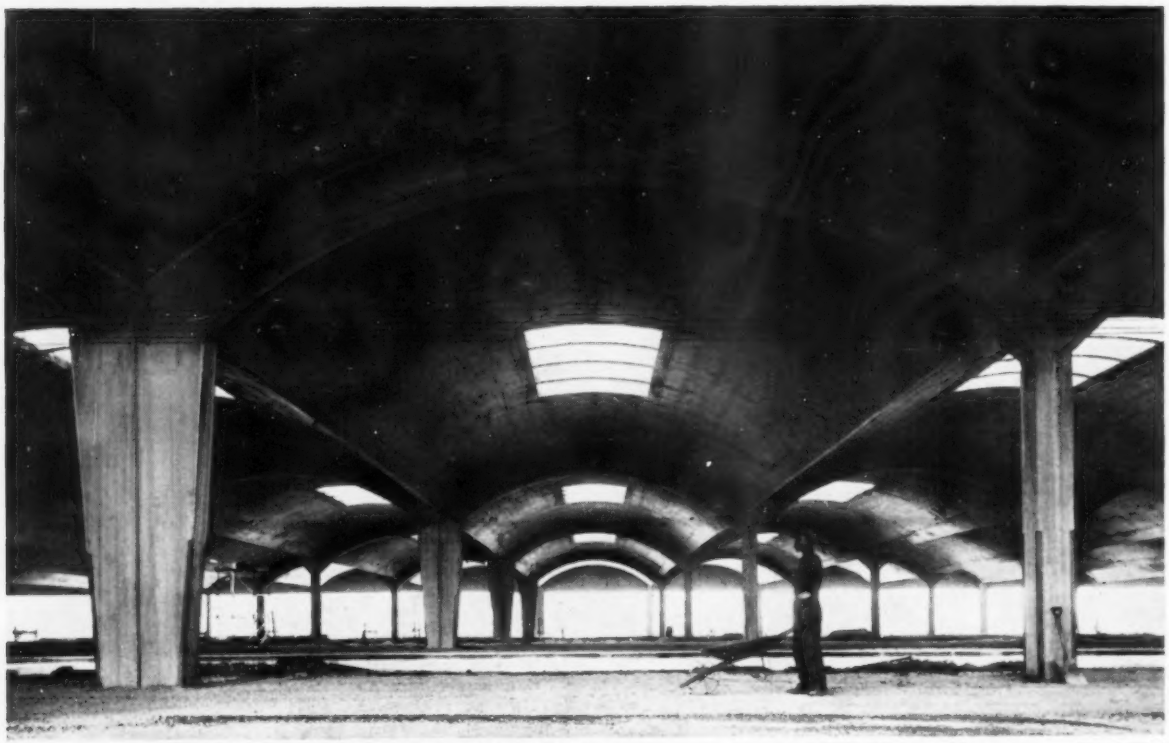
THE ARCHITECT & BUILDING NEWS

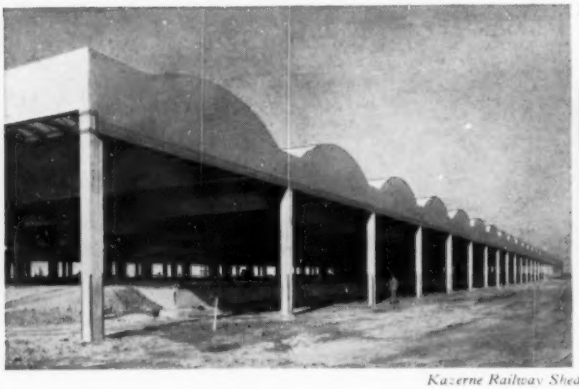
16 FEBRUARY 1956 · VOL 209 · NO. 7 · ONE SHILLING WEEKLY

• ELECTRICAL SPACE HEATING: II

PUBLISHED IN LONDON SINCE 1854

CONCRETE CONTRIBUTIONS BY TWISTEEL





Kazerne Railway Sheds, Johannesburg, South Africa, Contractors: Messrs. Lewis Construction Co. (S.A.) Ltd.

To make sure of the highest standards in concrete design and construction, at the lowest cost in steel, money and time, call in the TWISTEEL Design Service. Their specialist knowledge, backed by many years of practical experience, enables them to advise architects and engineers, with certainty, on every aspect of design and planning for every type of construction involving the use of reinforced concrete: and they can also supply the reinforcement.

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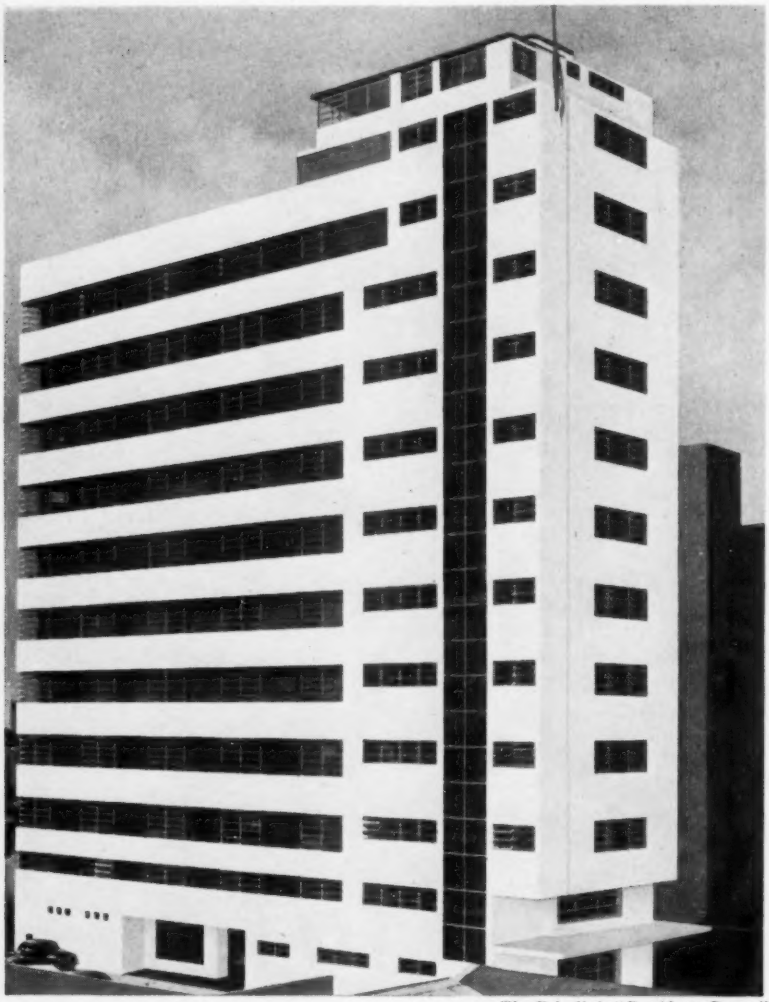
Always specify OSRAM fluorescent tubes

A

Talking of Snowcem



The Polyclinic "Presidente Remon"

. . . . look at the magnificent job of decorating it has done on the Polyclinic " Presidente Remon " in Panama City. Built for the Panama Social Security Bank, the building will provide medical services for Panama's national health organization.

Buildings like this need protection as well as decoration—and, moreover, decoration which will last. That's why Snowcem was chosen. That's why you'll find Snowcem used on buildings all over the world.

Snowcem is easily applied to concrete, cement rendering or suitable brickwork by brush or spray. Available in seven colours: White, Cream, Mid Cream, Buff, Pink, Silver Grey and Pale Green.

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WATERPROOF CEMENT PAINT
Decoration PLUS protection *at LOW cost*

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The Cement Marketing Company Limited, Portland House, Tothill Street, London S.W.1
or G. & T. Earle Ltd., Hull.

The South Wales Portland Cement & Lime Co. Ltd., Penarth, Glam.

11-Storey flats Tile Hill, Coventry.
City Architect and Planning Officer: Arthur Ling in succession to Donald Gibson.

FOR MODERN FLATS... MAISONETTES and CIVIC CENTRES

In modern flats, maisonettes and civic centres, Weatherfoil offers the architect interesting possibilities with important advantages. Incorporated at the planning stage, the heating system forms an integral part of the design but occupies a very small compact space. The virtual elimination of horizontal pipe-runs leaves floor and wall surfaces clear. Weatherfoil equipment 'tailored' into the building plan requires a minimum of site work for its installation.

To the owner, Weatherfoil offers these positive advantages in cost:—

1. Installation cost is lower than that of traditional equipment giving the same measure of heating.
2. Fully automatic control and the flexibility of Weatherfoil equipment ensure outstanding economy in running.
3. The amount of heat or hot water consumed can be separately metered to each flat.

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introducing

chain reaction

United Merchants proudly introduce the newest addition to their range — the Unimer Plastic Well-Bottom Cistern. Its up-to-date design and its durability make sure that it will be well received. Costing no more than old-fashioned cast iron, plastic cisterns have many advantages. As well as being smarter and cleaner, they are silent and need no painting. Modern equipment for the modern home, plastic cisterns will last a lifetime *— and, what's more, fit existing systems when used as replacements.*

- *Impervious to rust and corrosion.*
- *Silent in operation.*
- *Complete with chromium chain.*
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- *Costs no more.*

UNIMER
Plastic Well-Bottom Cistern

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Smoke Abatement

* There need not be Smoke with A FLAVEL FIRE!

WE MAY perhaps be pardoned for turning the phrase for our headline, because it is true. Flavel smokeless fuel fires satisfy both the smoke abatement requirements of public authorities and the traditional British love of a friendly, open fire. This is why public bodies throughout the country are continually specifying Flavel smokeless fuel fires for new development schemes. These fires provide constant heat (controllable over a wide temperature range) and they burn for hours without being touched. Heat is delivered at near-floor level so that the whole room is warmed and practically no heat is wasted—and they are very economical on fuel.

* * *

TWO MODELS

The two models available at once for quantity delivery are the 'Newbold' and the 'Flavel Seymour'. Both are modestly priced and available in a range of varied and gleaming colours. They are styled to harmonise with either contemporary interior decoration or with more conventional schemes. Heavy-duty fire bars are a Flavel feature ensuring long service, and the long-burning attachment of the 'Flavel Seymour' can be dropped to form a convenient shelf and to expose the lower part of the fire. Both models can be supplied with gas ignition if required. Insulation in the well of these grates is obtained by an air pocket thereby avoiding the use of fire bricks which, in replacement, can prove very costly.

* ***The 'NEWBOLD' and 'Flavel SEYMOUR' burn best on smokeless fuel but they can use*** **any** ***solid fuel.***

* * *

SMOKELESS SINCE 1920's

For new constructions, Flavels (who pioneered smokeless grates in the 1920's) also manufacture a full range of built-in labour-saving appliances, details and prices of which will be sent on request — or your Flavel stockist will gladly give you further information.

SIDNEY FLAVEL & COMPANY LIMITED • LEAMINGTON SPA

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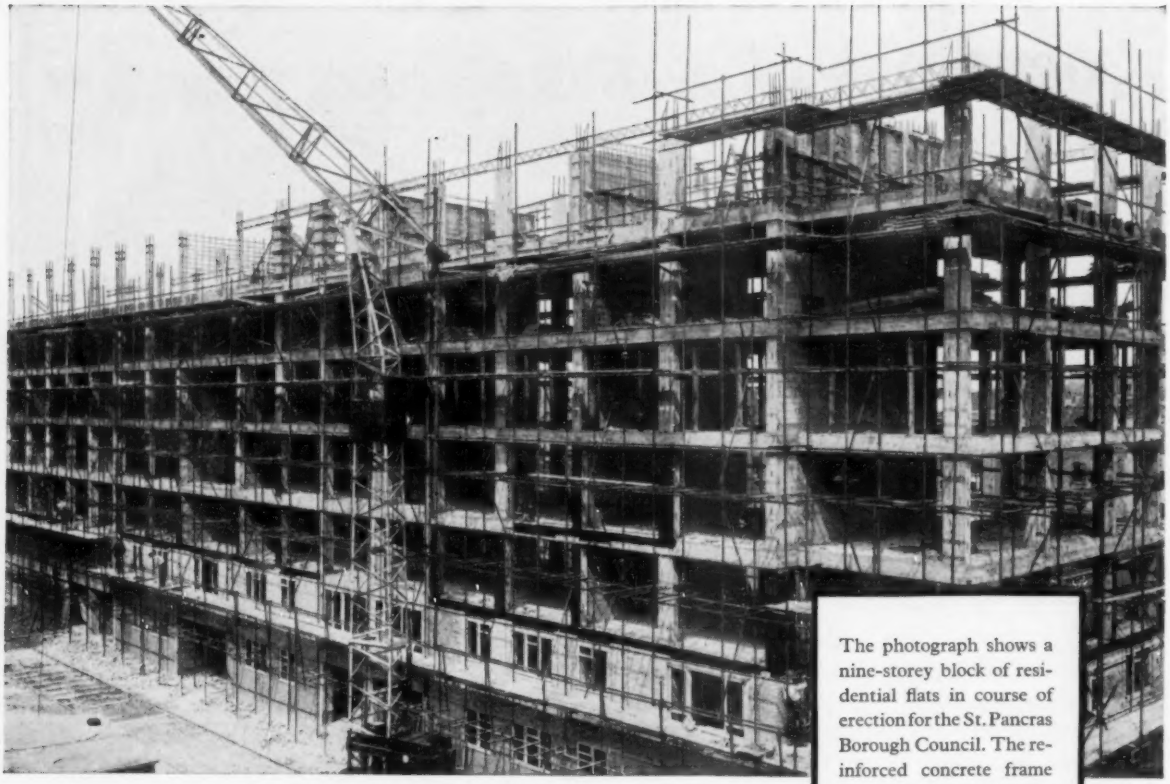
FOR CONCRETE REINFORCEMENT



Architects : Norman & Dawbarn. Contractors : St. Pancras Borough Council, Building Department.

The photograph shows a nine-storey block of residential flats in course of erection for the St. Pancras Borough Council. The reinforced concrete frame was carried out in our patent FRAMEWELD system.

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Acoustic and thermal insulation—

that's good

Architects: W. S. Hattrell & Partners. Sub-Contractors: Firmin & Collins Ltd.
"Glinex" partitions in the new offices at Watford for Holst & Co. Ltd. Building Contractors.

PERMANENTLY DECORATIVE "Glinex" provides excellent acoustical correction and absorption, as well as thermal insulation. It is permanently decorative and can be used as a core (faced with wood veneers, asbestos-cement, hardboard, kraft paper, etc.) or used in its natural state. Uses include roofs, walls, partitions, ceilings, doors, sub-floors and fitments. Available in 9 thicknesses and 5 densities. 5 standard sized panels.

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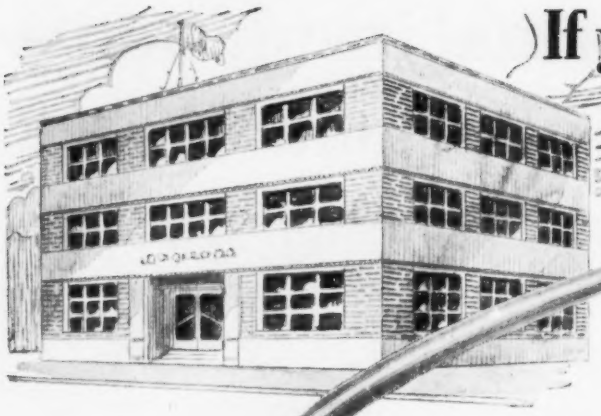

If you had to wire this small office block

. . . would you select 'Pyrotenax' if not why not? It requires no conduit or other form of protection, it can be buried in cement or plaster, and long surface runs can be made with the minimum of clips or saddles, and it can be easily bent to conform with structural contours. These features are just as advantageous in a small office block as in the largest factory, and they reduce *installation costs.*

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The use of the trade name 'Pyrotenax' is exclusive to the products of this Company and its associates.

NON-FIRE CAUSING
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SAFE AGAINST OVERLOAD
RESISTANT TO MECHANICAL MALTREATMENT

All things considered, a "Pyrotenax" installation on any and every job is an economy from the start—and for all time, because it needs no maintenance.

A non-technical description of 'Pyrotenax' is given in our booklet 'Current Carrying'. For the technical man 'Technical Data' is available—write for your copy.

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MANCHESTER Phone: Blackfriars 6946
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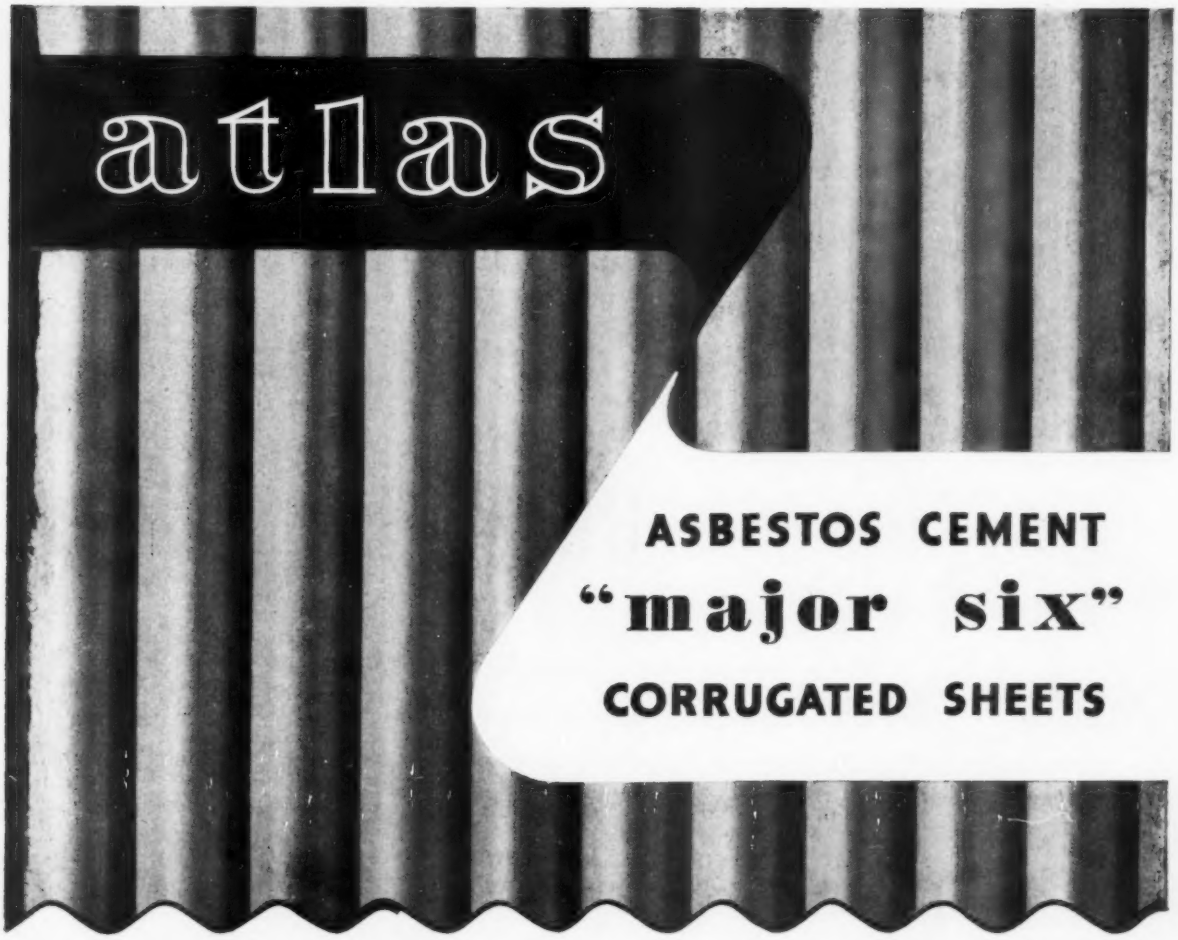

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B

we're changing a name on our family tree

From now on Lloyd Hardboard, Lloyd Insulation Board and Lloyd Acoustic Panels will be known as Bowater Hardboard, Bowater Insulation Board and Bowater Acoustic Panels. The Lloyd Metal Fixing Systems, used with Insulation Board, will be known as Bowater 'TALON' Fixing Systems.

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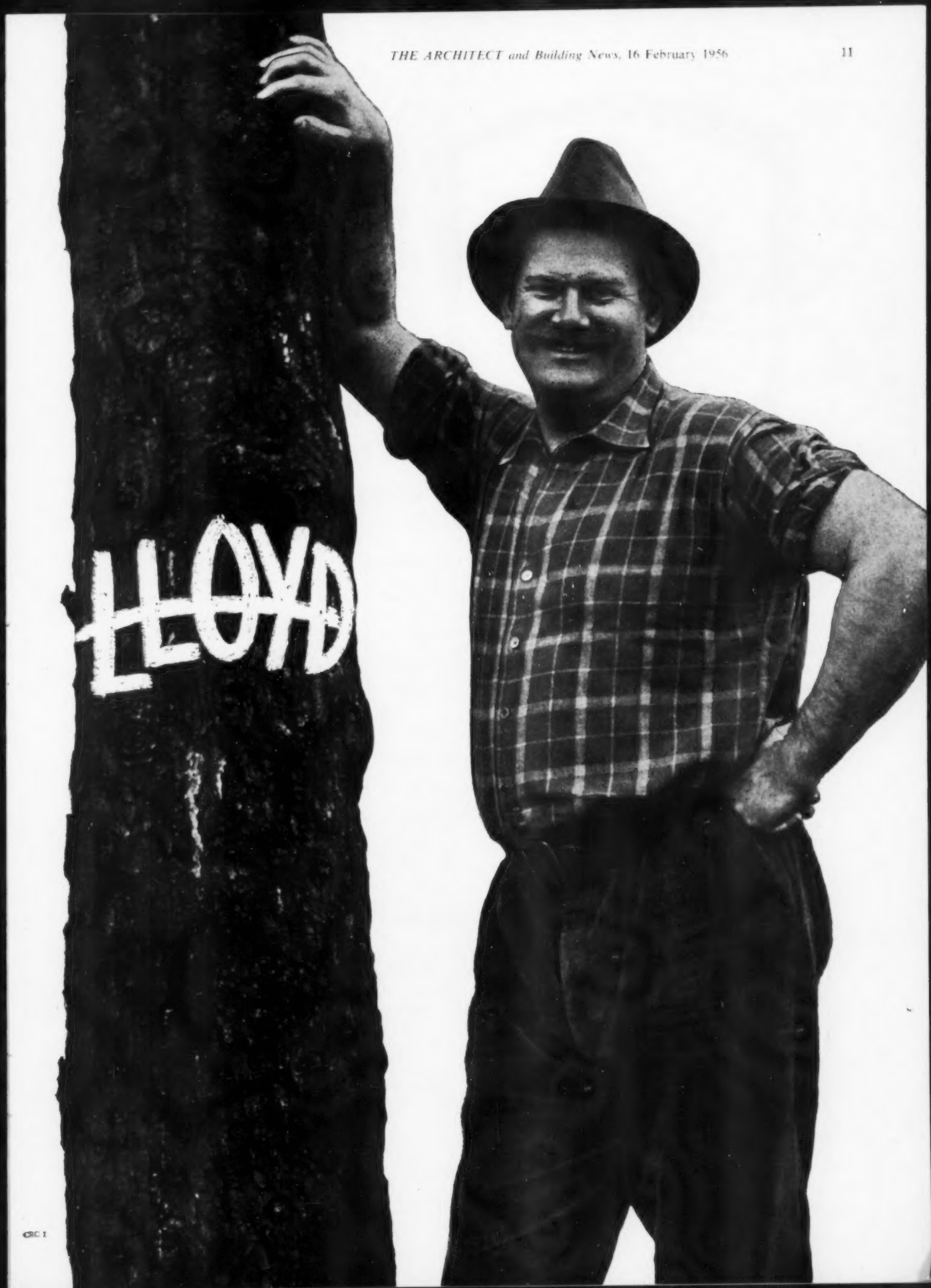
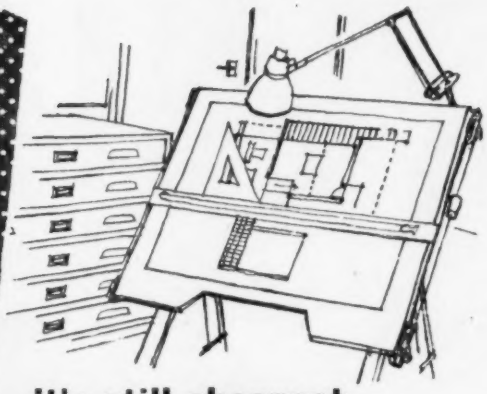

LLOYD

. . . specify solid fuel for the heating



. . . it's still cheapest— and far more efficient with the latest appliances

For continuous domestic heating, solid fuel is still far and away the cheapest fuel. And, used in modern appliances, it is far more efficient than ever before. New fires, for instance, with restricted chimney throats and convection jackets, give up to 40 per cent more heat from the fuel. Like the new stoves, cookers and boilers, they're much easier to run, quick to clean—and very well made.

For dwellings of all kinds these up-to-date appliances are a wise—and farsighted—choice. They will give years of fine service economically.

HOW TO GET THE FACTS

The Coal Utilisation Council has established various services to help you get the right appliances for each job and ensure correct installation.

Recommended Appliances Lists of recommended domestic solid fuel appliances are published twice a year in co-operation with the Solid Smokeless Fuels Federation and are yours for the asking.

The C.U.C. publishes booklets on appliances, their installation, fuel storage and insulation, all of which would be useful to you or your staff. If you would like copies of all, or some, send for them by filling in the coupon below.

C.U.C. Training Centres where courses are held in London and Glasgow for architects', local authorities' and builders' staffs. Instruction in correct installation is given by experts. These Training Centres can be visited by housing officials, architects, builders and others professionally interested in domestic heating by appointment. For those who cannot attend courses in London and Glasgow, special one-day courses are held in Technical Colleges in various parts of the country.

C.U.C. Information Centres in many major cities display the latest appliances, have leaflets, and can give you expert information. See the addresses below.

C.U.C. INFORMATION CENTRES

Birmingham : Burlington Passage, New St.
Bristol : 5 Broad Quay, City Centre.
Cambridge : 24 St. Andrew's Street.
Cardiff : 9 Castle Street.
Glasgow : 341 Bath Street.
Leeds : 99 Albion Street.
London : The Building Centre, 26 Store Street, W.C.1.
Manchester : 257 Deansgate.
Newcastle upon Tyne : 18 Saville Row.
Nottingham : 4 & 6 St. Peter's Gate.

SEND COUPON FOR FREE BOOKLETS

To the Coal Utilisation Council, 3 Upper Belgrave St., London, S.W.1

Please send me the following :

List of Recommended Domestic Solid Fuel Appliances
Details of C.U.C. Installation Courses

And also copies of booklets:

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Architectural Design Data for Solid Fuel
Fuel Stores for Houses and Flats
Make Your House Cosier in Winter (*Insulation booklet*)

(Please cross out those not needed)

Name .....

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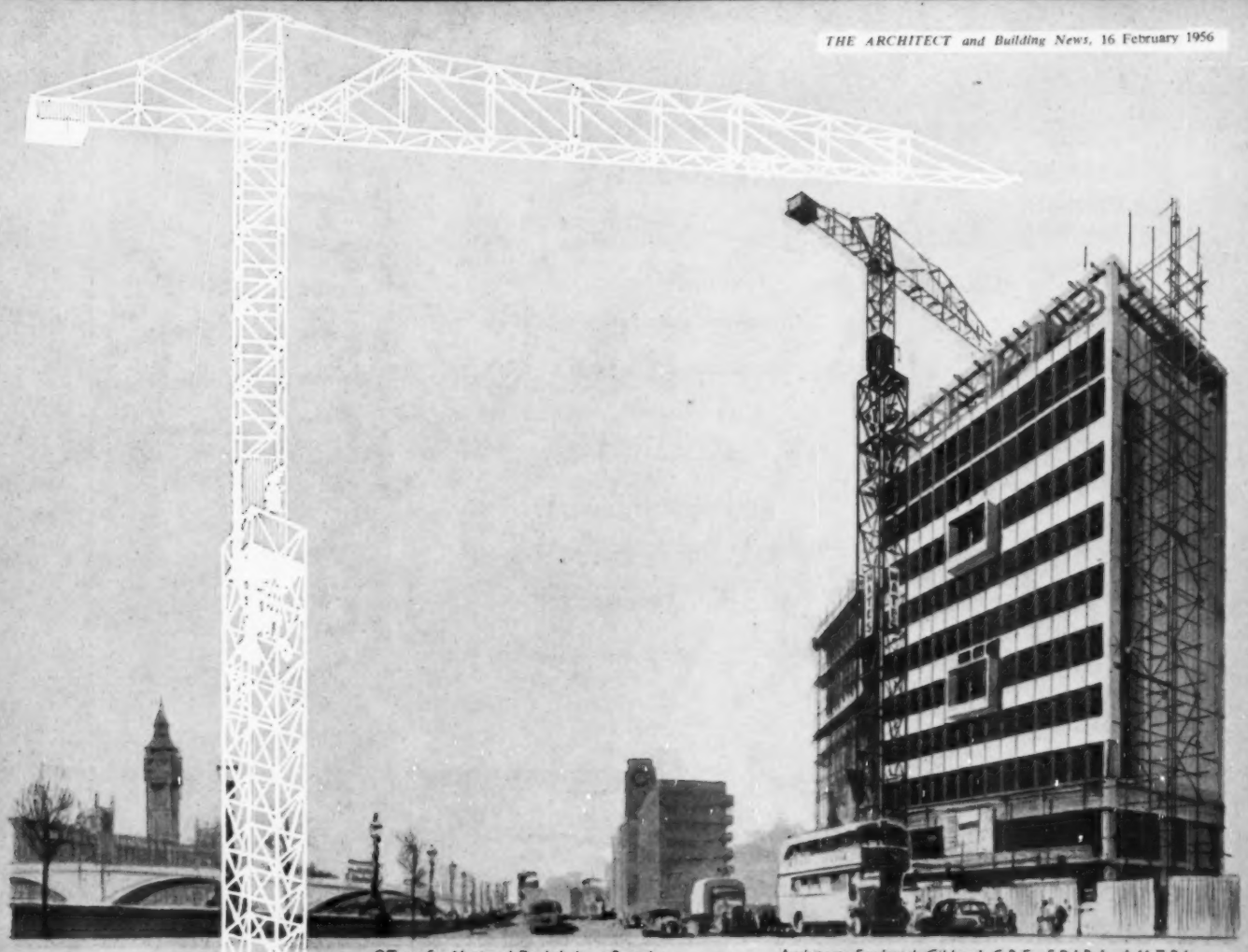

Offices for National Dock Labour Board. *Architect: Frederick Gibberd, C.B.E., F.R.I.B.A., A.M.T.P.I.*

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Architects and building owners find that Wates building operations are both economical and successful because they make full use of the latest mechanical equipment, and because they co-ordinate men, materials and machines to the maximum advantage.

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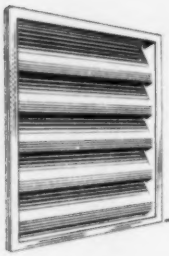

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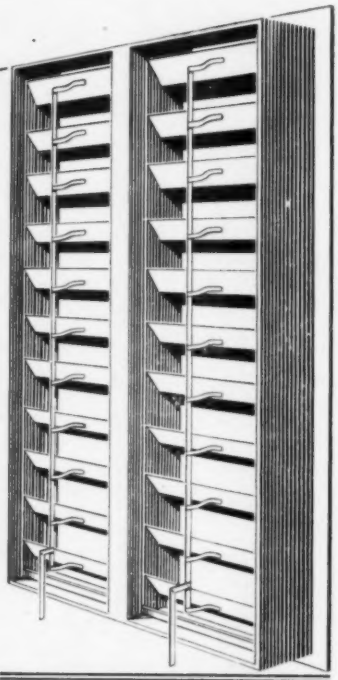

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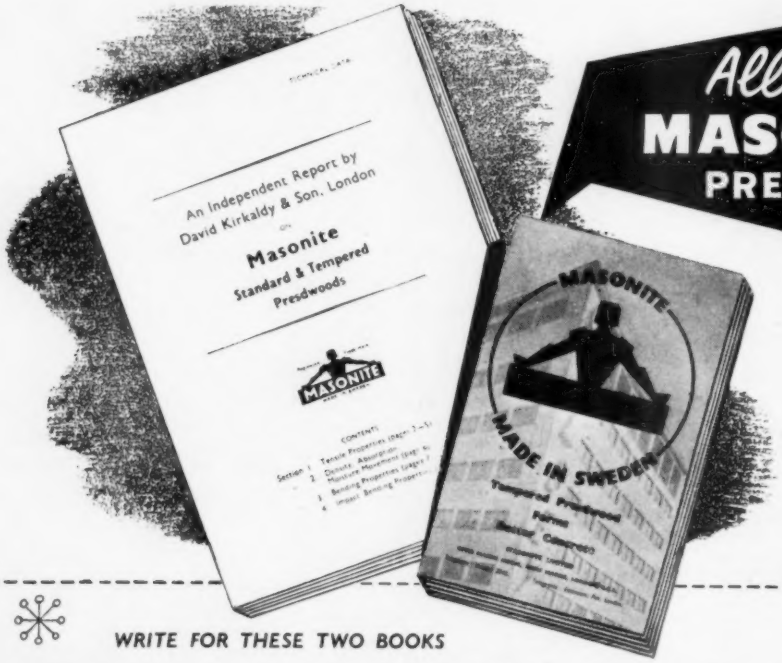

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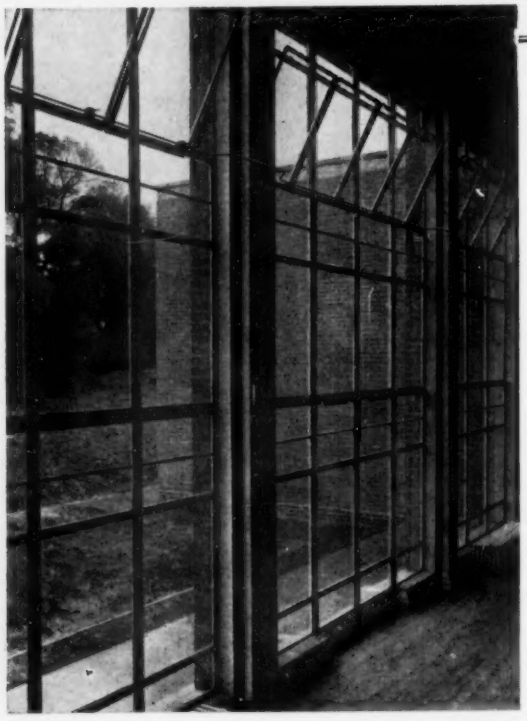


Window control installation at **WARLINGHAM SCHOOL, SURREY** *by*

TELEFLEX REMOTE CONTROLS

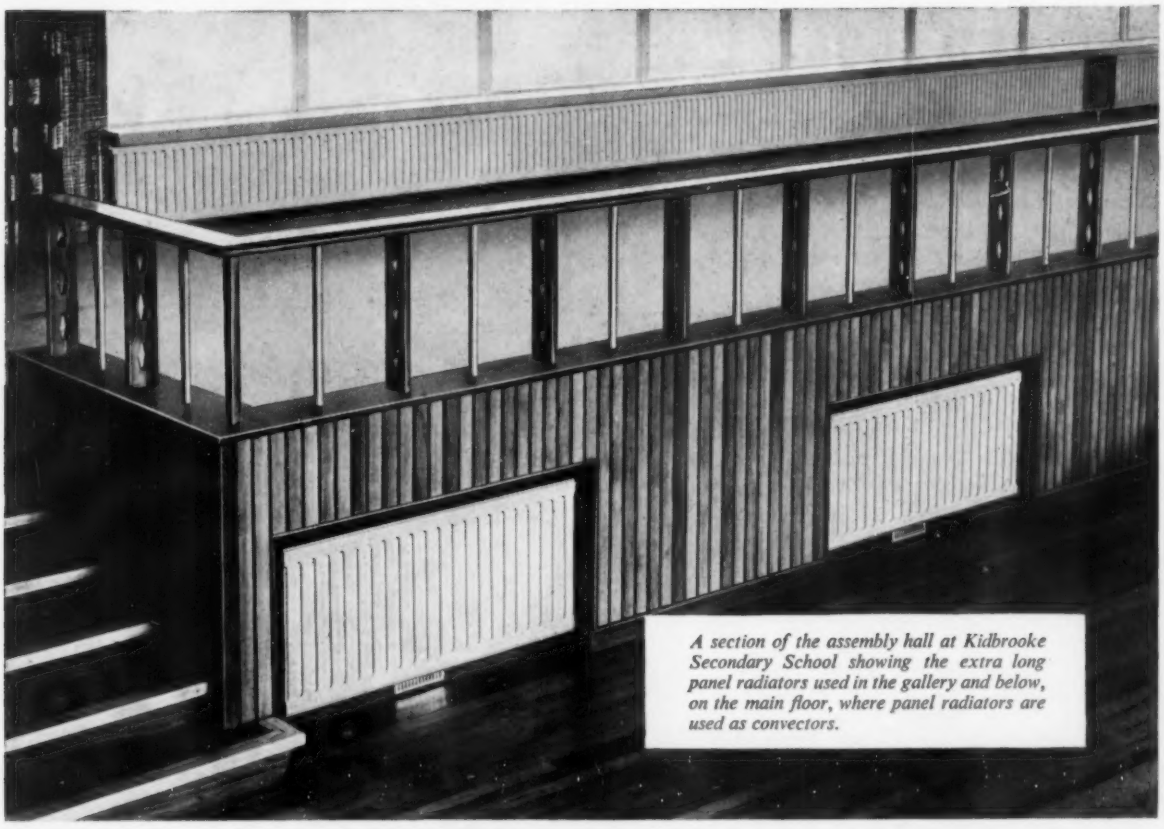
Architects and suppliers regularly specify Teleflex Remote Controls for the satisfactory operation of high windows and ventilators in schools, factories and offices. The Teleflex System ensures quick, positive and trouble-free operation for opening and closing, without distortion and throughout all directional changes. Its flexibility permits simultaneous multi-point operation from a single line transmission—as shown in photograph.

Please write for further details.

You are invited to visit us at THE BUILDING EXHIBITION *Stand No. 389, Row Y*

Architect: J. Harrison, A.R.I.B.A., Architect to the Surrey County Council. Window Installation by C. E. Welstead Ltd., Croydon.

TELEFLEX PRODUCTS LTD · BASILDON · ESSEX Phone: BASILDON 22861



A section of the assembly hall at Kidbrooke Secondary School showing the extra long panel radiators used in the gallery and below, on the main floor, where panel radiators are used as convectors.

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IDEAL FOR WALL FIXING

EASY TO PAINT, CLEAN, AND KEEP CLEAN

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MORE RESPONSIVE TO THERMOSTATIC CONTROL

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Gulf long-life Radiators cost less, are available in a wide range of Column and Wall Panel types, in any length and in curved and angled form. Gulf specialise in producing radiators for unusual and exacting requirements, are installed throughout the country and in the largest building built since the war.

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Gulf Panel Radiators provide the perfect balance of radiation and convection to ensure the highest standard of heat comfort coupled with efficiency of operation and maximum fuel economy.

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also supply: Oil-filled Radiators for Electric, Gas and Paraffin Operation, Domestic Boilers, Electric Warm Air Heaters, Electric Bed Sheets, Gas and Electric Towel Rails, Room Thermometers, Temperature Controls, Cylinder Jackets, Insulation Materials, "Hurdapta" Fires, Weatherstripping and Draughtproofing.

The STILSOUND floor

The value of adequate floor insulation to reduce noise transmission and fire-risk in multi-storey buildings is now widely recognised. The STILSOUND system is a completely dry, light weight method of insulation that can be readily and quickly applied to timber floors, and one which affords the maximum efficiency in both thermal and acoustic insulation, as well as providing a substantial fire barrier. This is the third in a series of announcements detailing the construction of the STILSOUND floor stage by stage. Full details of the complete process are available on request.

The THIRD stage in detail

Having spread the STILWOOL mineral fibre insulation between the joists to an average depth of 5 inches at a density of 8 lbs. per cubic foot (providing the optimum weight for the most efficient insulation against air-borne noise, namely 3 lb. per sq. ft.) it is now compacted to a thickness of 3 inches, resulting in a density of 12/14 lbs. per cubic foot. This is best done by means of a simple wooden tool made up as shown, which speeds up the operation and ensures constant correct depth. Raking must be avoided. The floor is then ready for the laying of the STILMAT insulating mat, details of which will be given in the next announcement.

STILWOOL and STILMAT are two of the

STILLITE

range of mineral fibre building insulants.

Scottish enquiries may be addressed to:
STILSOUND INSULATION LTD., 213, West Campbell St., Glasgow C.2

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Cut along here

One Coat of B.P.L.

Fibre Board Sealer

provides a

Non-absorbent Paint

Surface for Soft

Board

To prevent the rapid absorption of gloss paints by soft board British Paints Limited in conjunction with Tentest Fibre Board Co. Ltd.,—has developed this new sealer. A single application provides a satisfactory surface for subsequent paint coats.

Where low cost or time saving are important a gloss finish can be obtained with a single coat of enamel, though the normal undercoat naturally improves the finish and gives increased durability to the paint system employed.

Simple Preparation

B.P.L. Fibre Board Sealer can be mixed with either hot or cold water. A hot mix is quicker. It is always applied cold.
One gallon covers approximately 30 square yards.
Supplied in packets each containing approximately 1 lb.
Full details from the sole manufacturers.

BRITISH PAINTS LIMITED
Portland Road, Newcastle upon Tyne
In conjunction with
Tentest Fibre Board Co. Ltd., 75, Crescent West, Hadley Wood, Barnet.

For Perfect insulation in one thickness use BLACK SHEATHING FELT

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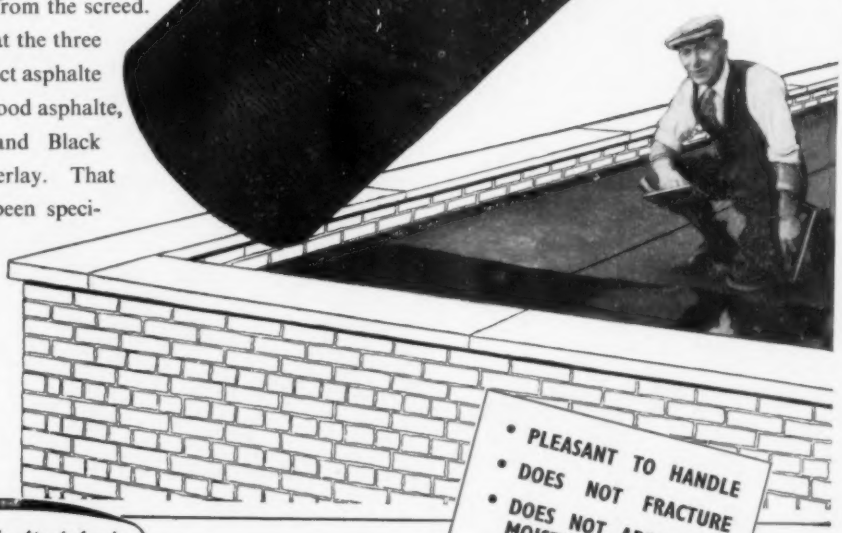

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Vol. 209 No. 7

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16 February, 1956

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Ten Years of British Architecture 1945-1955

TO those who read the magazines none of the buildings in this exhibition will be new discoveries. What *is* new is to see the spotlighting technique of the selective exhibition turned for once on ourselves. We can enjoy for a change a view of the British architectural scene through the narrowed eyes of selectors who, for the moment, are not trying to reform the world with sociologists' captioneering but are seeking quality alone. What they find stands on its own without explanation in an exhibition of photographs which is very well presented, within the limits of the occasion, by Trevor Dannatt. To enjoy it to the full one should perhaps adopt the pretence of being one of those foreigners who will visit it during its British Council tour. Seeing it in this way, forgetting or ignorant of the outrages beyond, it is difficult not to feel, momentarily at any rate, some pride because such an exhibition from this country can now stand comparison with the travelling pin-up shows from overseas.

The word "Modern" is omitted from the title, it now being silently understood that architecture can be our own without apology. Indeed, John Summerson in his admirable introduction to the catalogue suggests that the word "modern" is fixed historically in the 'thirties. This leaves us rather short of a word, now that the other one has reached the basement level of department stores.

The marriage of method and art, of thinking and feeling, which was the central aspiration of the modern movement of the 'thirties, is here seen to have been consummated, and if the thinking is more apparent than the feeling, it can justifiably be claimed that the circumstances of this post-war decade, while giving full scope to innovations of method, have not been conducive to any sensuous flourish. Our sensibilities have been fed more with the compassions of sociologists than with the passions and glories of civic or personal pride. Thus we have a down-to-earth exhibition with the South Bank Festival and the concert hall almost alone in representing the aspirations that proceed beyond the needs of pleasant shelter, an exhibition that shows at this background level a remarkable and creditable consistency, a show of British temperament, without anything standing out from that background. There is no real display of personal taste, no glorious eccentric at large, little romanticism in spite of the fact that the major personal architectural influences (from abroad) have been romantics. We have in fact what we have wanted—that background consistency through all the applied arts—and that is a kind of a victory for both the architects and more particularly for the journalists.

It was perhaps inevitable that the architecture of this decade should be to some extent three-dimensional journalism, the hard problem of the time needing a communal effort rather than the long and luxurious evolution of personal trial and error. And the pace of development in our time favours the sharp lurching journalism of the diagram and diagrammatic thought rather than the careful qualifications of prose. Logic is more highly valued and more easily written about than feeling, and it is a bold man who commits himself to a judgement without statistical backing.

The written word and the built building constitute architecture together. If in looking at this exhibition one is tempted for the moment to wish that the architect would be left alone for the next decade to evolve and enrich his sensibilities by means more derivative from the act of building than from words, that fancy can only be momentary. Literature has been for too long the dominant partner. The moderns closed the door on the literary allusions of the romantic novelists and opened it to the technical and sociological journals —and quite right too. But perhaps it can be argued that their single-mindedness, while gaining for them a source for their efforts and the conviction visible in this exhibition, lost for them a sense of occasion and a feeling for the different moods of different occasions. That is all right when, as in these last years, the occasions are the same. It is visually all right in an environment still dominated by the past. In the next decade it will not necessarily be all right any more.

Summerson in his catalogue introduction detects a new radicalism . . . "Modern architecture" he writes "arrived here in the late 'twenties, already a 'manner', an 'idiom'. Indeed, whatever was argued at the time, this was its invincible attraction. Throughout the 'thirties, principles were almost taken for granted—swallowed, one might say, in slogan form—while the idiom was assiduously acquired. The acquired idiom was noticeable on the South Bank. But already in 1951 there was perceptible hostility to whatever was idiomatic and a tendency to go in search of principles. Not,

it should be understood, theoretic principles, but principles embodied in actuality, principles announced as building." But, it could well be added, the embodiment of a principle in one building inevitably becomes the idiom in the next.

The radical approach is the only starting point we have, but, in continuing our welcome to it, it would be as well to bear two qualifications in mind. Firstly, a building can not be functional from all points of view and at all levels of thought at the same time. In fact what happens is that aesthetic theory gives a licence to various selected functional requirements to become dominant at a particular time. The choice even though subconscious is there. Secondly, the radical attitude shown in this exhibition only seems to be operative at a certain level of thinking, at a certain distance from the job. To put it unkindly, it works at the level of the news flash and at the distance of the photographer.

If in the next decade those two qualifications were removed the consistency and conviction of this exhibition might well still be in evidence at the exhibition that we must hope the Arts Council will arrange in 1966; but we might also find a play of contrast between one building and another, between one occasion and another —a changing mood and a larger vocabulary of architectural means. In the first place if it were openly acknowledged that a choice of feeling does in fact preceed analysis and the radical process of design, then we might make use of that choice. While the 'preconceived idea' could still remain unfashionable, the preconceived mood could play its part, allowing a building not only to be a monument to the architect and to the current period taste, but also to be a monument to the particular occasion. At the other end of the process of design, if rational thought could be carried beyond the sketch plan stage to the detailed working drawing with the same sense of humility that is now shown to a client's brief, then we might well find that the means of expression derivative from building are far greater than has yet been realised. Simplicity of overall conception—"a principle announced as a building"—is without doubt desirable and is in this photographic exhibition everywhere apparent. But proceed to the actual buildings, advance from the photographer's distance and there is often nothing more to discover. The detailing shows nothing of the love of the act of building that you would expect to find. It shows only the most grudging acknowledgment to weather, wear and movement. The only determination is the determination to ensure that sketch plan is built as a sketch plan.

NEVILLE CONDER

Ten Years of British Architecture remains open at 4, St. James Square until 7 March.

The following architects and firms are represented in one or more sections: C. H. Aslin; Adie, Button & Partners, with Thomas Bilbow; J. S. Allen; Amis,, Howell, Killick and Partridge; Armstrong & McManus; Arcon; Ove Arup & Partners; Architects Co-Partnership (and with F. Hamer Crossley); H. T. Cadbury Brown; Eric Brown & Peter Chamberlin; Misha Black; D. A. Birchett; Lionel Brett & Kenneth Boyd; Bridgwater & Shepheard; Gordon & Ursula Bowyer; Challen & Floyd; Denis Clarke-Hall with C. G. Stillman; Cruikshank & Seward; James Curbitt & Partners; Trevor Dannatt; Devereux & Davies; Drake & Lasdun; Farmer & Dark; Richard Finch; Fry, Drew & Partners; Frederick Gibberd; Alexander Gibson; Victor Hamnett; Hellberg & Harris; Harlow Design Group; Katz & Vaughan; John Lacey; Lubetkin & Skinner; Subiotto & Bliss; Eric Lyons; Lyons, Israel & Ellis; J. L. Martin; Leonard Manasseh & Partners; Paul Mauger & Partners; Peter Moro; W. Wycliffe Noble & Partners; Robert Paine & Partners; Brian Peake; M. M. Powell; Powell & Moya; Richard Sheppard & Partners; A. & P. Smithson; C. G. Stillman; Taylor & Green; Ralph Tubbs; L. & M. Ventris; Basil Ward; Peter Womersley; Yorke, Rosenberg & Mardall (and with R. A. H. Livett).

PRODUCTION DIFFICULTIES CAUSED BY THE DISPUTE IN THE PRINTING INDUSTRY STILL CONTINUE AND WE AGAIN ASK OUR READERS' INDULGENCE FOR THE REDUCED NUMBER OF PAGES AND OTHER DEFICIENCIES IN THIS WEEK'S ARCHITECT AND BUILDING NEWS.

Events and Comments

TEN YEARS OF BRITISH ARCHITECTURE—III

I expected this exhibition to be good and I was not disappointed. The selection committee has done a very good job and managed to include almost all the best work of the last ten years. Mr. Philip James' "middle road of development" proves to be, as I thought it would, the main stream of what used to be called the Modern Movement. It is an exhibition to be proud of although I have no doubt that the P.R.A. will lash it if and when he sees it. Mr John Summerson has contributed a very good and sensible essay to the exhibition catalogue, thus providing a complete answer to any attack which the P.R.A. may choose to make. Quite apart from Mr Summerson's introduction the catalogue is unusually informative.

I do not know whether it was the selection committee or Mr Trevor Dannatt, the exhibition designer, who chose the actual photgraphs, but it was very well done. Only very few have been included because of their sky, background or eccentric view point. Generally speaking it is the building and not the picture which has the upper hand. Mr Dannatt's setting is excellent; complete simplicity is combined with good proportion and orderliness. Clever use of changes in scale saves the exhibition from the boredom of photographic shows arranged on standard screens. The exhibition is almost completely black and white with here and there a coloured print or a coloured sub-title. To show architecture without colour is to impose a severe limitation but allowing for this it is one of the best architectural exhibitions I have ever seen.

The Arts Council are to be doubly congratulated, first on having after so long ventured into the field of architecture and secondly for having done it outside the umbrella of the R.I.B.A. This is not to be disrespectful to the Royal Institute, but no one could deny that had a committee of the R.I.B.A. chosen the buildings the results would have been very different. I was delighted to see that in spite of Mr Philip James' apparent dislike of MARS Mr Summerson pays full tribute to the work of the group and its original members in his essay. The British Council, says the foreword to the catalogue, has made a generous contribution towards the cost of the exhibition and when the Arts Council has finished with the material it will be handed over to the British Council for circulation abroad. This,

though economical, seems a crazy idea to me. By the time the white cellulosed panels have been put up, taken down, packed and transported a dozen times through the not so clean galleries of this country, they will hardly be in a condition to represent British exhibition design abroad. The better plan, but more costly, would be to make a copy of the whole show now and let the British Council have that.

Another less important point is that the lighting, most excellently contrived, is not part of the travelling exhibition. This is a great pity.

Paul Reilly writing in the *Manchester Guardian* points out that the title of the exhibition is doubly misleading first that it cannot be said to represent architecture in this country as a whole and secondly it is not truly an exhibition of British architecture but rather of architecture in Britain, for many distinguished modern buildings have been built by British architects overseas. These are valid criticisms but do not seriously detract from the very great value of the exhibition.

EXHIBITION OF CHURCH BUILDINGS

The current exhibition at the Building Centre gives a sadder but truer picture of architecture in Britain to day. No one will deny that a church is among the most difficult design subjects imaginable. When the building also has to serve as a hall for other functions ranging from baby-shows to dances the problem becomes almost insoluble. The efforts of a large number of architects to do the impossible are to be seen (until one o'clock on Saturday) at the Building Centre. Generally speaking the results are poor, but there are one or two good buildings, and others are excellent in parts.

The Central Council for the Care of Churches has done very well in presenting a motley collection of models, photographs, and drawings of every conceivable quality, in a neat and attractive way.

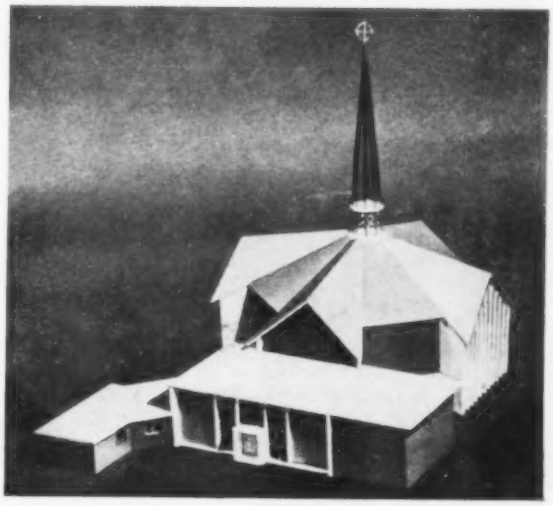
This exhibition is in marked contrast to that at the Arts Council where all the buildings are at least cousins if not brothers. In the Building Centre exhibition all the known styles and some unknown ones are to be seen in great variety.

Opening the exhibition the PRA, who was rather subdued, called for simplicity. Having seen the exhibition I am more than ever convinced that while it requires a brilliant architect to design a church, which is a living reproduction of a past style, it requires a genius to design a church in the contemporary manner. Simplicity is not enough.

B.R.S. SAILING CLUB

This boatless bunch of enthusiasts exists by chartering other peoples yachts. Last year in two boats they cruised from Chichester to Poole and back. They number skilled skippers and navigators among their members. It is a pity that the building of a professor nervi reinforced cement yacht is not on the Building Research programme. If any reader can offer these enthusiasts a sound bottom to cruise in would he please write to Mr. S. Meyrick, ARIBA, at the B.R.S.

The P.R.A. measuring the height of the spire of one of the models at the Post-War Churches exhibition. Dr. Fisher, Sir Giles Scott and part of Mr. Frank Yerbury complete the picture. Below a larger picture of the model which is of Holy Cross, Doncaster. Architect: D. F. Martin-Smith.



JAPANESE FLAT IN KNIGHTSBRIDGE

I hear that a modified version of the Japanese flat shown at the H.55 exhibition is to be on view at Woollands Knightsbridge in April. This store really is looking up, my grandmother *would* be surprised if she were to see it now. Well done sirs!

ATOMS & CERAMICS

A former Atom expert in the States thinks that our future cities may be built of coloured ceramics as a

protection against atomic radiation & extreme heat.

Architects will have to brush up their technology if they are to compete with atomic heat *and* frozen water pipes.

THE ALLIED ARTS IN VIENNA

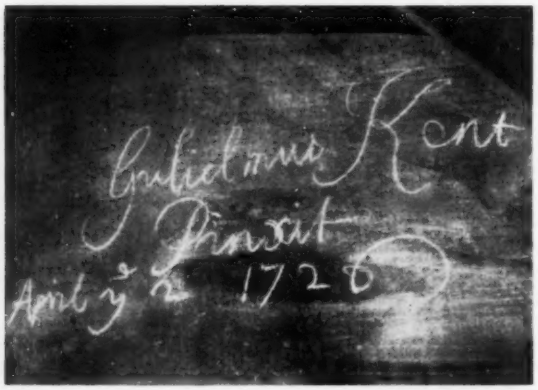
I have received a small book of excellent photographs, many of which are coloured, illustrating sculpture, mosaics and murals in post-war building in Vienna. The range and variety of the book is astonishing. In Britain the inclusion of a piece of sculpture or a mural in a housing scheme or a school is still news. This book makes it appear that the reverse would be the case in the Austrian capital.

The book is in the form of a guide and gives maps with references to each work with the name of the artist and date. Over five hundred items are listed. Every local authority should have a copy.

CORRECTION

In my note earlier this year on Messrs J. Lyons' Industrial Canteens Advisory Service, I said that advice was free. Actually a charge is made, and I apologise to those readers who wrote for details for misleading them on this point.

ABNER



A signature in chalk of William Kent has been discovered on the back of a canvas at Kensington Palace during restoration work being carried out by M.o.W.

Correspondence

Dear Sir,

Referring to your article in the 2nd February issue of the A. & B. N., the "saltarium" at Addlestone did not require "reasonable resonance". Reverberation and resonance are not synonymous, and as the former term describes relative "liveness" and "deadness" it must be the correct one in this context. Resonance implies vibration at selective frequencies and is a quality to be avoided, especially where music is concerned, except in special applications. These terms are very often confused, and it is because this is a notoriously common error that I think it worth correction.

Yours faithfully,

ALEXANDER BROWN.

P.R.I.B.A.'s Address to Students

TWO years ago I remember that Mr. Basil Spence was the Critic, and he naturally gave a delightful speech, in which he pointed out that the entries showed a great deal of inspiration and talent, and went on to hope that all the things put into these competitions would not be lost when you began to thrust out into what he called "the jungle of private practice". This is, of course, of tremendous importance, because the architect is engaged in the profession which gives him great satisfaction by merely doing the work, and if any part of this is lost, both architecture and the architect are the poorer; indeed it is one of those operations where the actual joy of doing the work is of far greater importance than any financial reward which it attracts, and it is, therefore, essential that the architect's integrity shall be maintained.

At the beginning of the century there was a relatively small number of architects engaged in private practice, and a large number of people without any training happy to serve as assistants, with very little hope for most of them of ever becoming Principals. At the present moment all architects are trained in the same way, and there is no division in education between the architect who runs a private practice, or a Local, or National office, and those who, for a variety of reasons spend their time as assistant architects in one or other of these organisations. The whole pattern has now changed, and though a large number of qualified architects act as assistants to the more fortunate ones, it is essential that a pattern of work should be devised, so that each architect should have an opportunity of exercising to the full the qualities and knowledge which have been developed during the Course which has resulted in his becoming a qualified architect.

I believe the solution to this problem is absolutely essential to the well-being of the profession. I can see no reason why this new pattern, which is inevitable under the new circumstances, should not be accomplished, but there is one point, about which architects appear to be in some sort of dilemma, and that is as to how the qualified architect should be appropriately paid. Some part of the profession seems to have got it in mind that the only way any body of people can be assured of a proper reward, is by means of some form of Trades Union. I think this to be an erroneous idea, because the moment one thinks of reward alone, and makes an Institution whose sole object is to get that reward, you then have a condition which I believe to be fatal to architecture. In my opinion, the moment a body of people enter into an organisation whose prime aim is directed towards remuneration, then the appropriate incentive to do the best possible work, particularly in this profession, is taken away. I believe the way to obtain an adequate reward is to demonstrate that the work done is of such a quality that it will earn the reward quite automatically. Some people have thought in the past that an extension of the Registration Act in order to make it compulsory for an architect to be engaged on every building, would be a good thing. I do not hold this view, because I believe that architects can control all building by demonstrating that their work is so important that no individual or firm would dream of putting up a structure without the aid of the profession.

It is quite clear that during the whole course of this Institute's existence over the last 130 years, it has spent its time in keeping up its high prestige, and I am quite sure that in the future, with your help, and in spite of the difficult and changing circumstances under which we work it will hold and enhance its position, and produce architecture of which our successors are able to be proud, and at the same time help the large number of young members in all the problems and difficulties in which they are likely to be placed in the coming years.

What's What

by

H. B. CRESWELL

The new National Library of Scotland

ON looking through my *Times* of 13th day of December, 1955, I was held by photographs filling pride of place on the back page, which showed the chief elevation and main interior feature of a new Public Building of first consequence in a City to which few would refuse second place among the cultural centres of the Commonwealth.

The name of the architect of this building was not included with particulars of the photographs of it; but reference was given to further details printed on another page and I turned with curiosity to the paragraph that should put me wise. It did so by informing me that the new National Library of Scotland, in Edinburgh, is not the design of any architect, *but has been brooded and hatched out by the Ministry of Works*.

This attribution, as I have since ascertained, is not wholly correct; for although the preliminary schemes were prepared by the Ministry, Dr. Reginald Fairlie, R.S.A., was appointed Architect, and after his death direction was put in the care of Mr. A. R. Conlon under the supervision of Mr. Stewart Sim of the Ministry; nevertheless the glib unchallenged ascription of the design to the Ministry of Works under authority of *The Times* will serve the purpose of this writing which is to call attention to a matter—vital in the very fabric of architecture—that yet seems to be, in general, entirely overlooked.

When, then, I speak of the designs of buildings as "hatched" I mean that they are no more than *the irreducible residue of informed conflict*. Clearly the term is not only applicable to the vocational output of the Ministry, but equally to designs for buildings hatched by the L.C.C., hatched by our Municipalities; hatched by the I.C.I. and hatched also by Messrs. Bogo, Pabslib, Bigtrot, Snodge, Partners and Co., architects, surveyors and engineers.

Let it be said that if anyone holds hatched designs to have greater merit than individual creations, the field is open to him to proclaim it. I am here concerned to affirm only, that architectural designs ascribable to agglomerations of technical experts and architectural staffs are *de facto* of a different order to those belonging to great architecture and inspired by the great among architects. It is true that no proof of this distinction is available as would be if we had any buildings designed by agglomerations of reputable architects to compare with modern hatchings; but let us suppose that Messrs. Shaw, Scott, Collcutt, Street, Lethaby and Rowan Anderson had amalgamated to produce some, with perhaps Messrs. Lutyens and Treadwell acting as consultants, and I, for my part, find it impossible to imagine what the result of such a coalition of conflicting aptitudes would be when they had been, so to speak, shaken up together in a bottle.

I am aware of reluctance among those who seek the opportunity of self-expression in Art—which was formerly the incentive to professional practice in architecture—to engage in mass incubation of buildings instead of individual creation of them; and I sympathize with that reluctance, for what will his employment be when a man has enrolled in one of these brooding organizations?

At the outset he will be told by a senior what he is to do, but he will not be told what it is he is doing nor why he is doing it. His senior acts in this way partly because he is merely a cog in a mechanism, and partly because he knows no more than what he has been told to get done by a higher official who himself has no more knowledge of what he is about than is necessary to instruct those below him. The top dog of all receives his instructions in Minutes recording the deliberations of a committee predominated by a lay chairman whose architectural tastes have perhaps been warped by the prejudices of his grandmother's aunt rubbed into him in childhood. Such things happen. Did not the chance advent of a new Prime Minister impose Venetian facades upon Scott's gothic design for the Treasury building in Whitehall! and some may remember Lord Curzon, when Viceroy, directing specific changes in a design by the Architect to the Government of India whose career was broken by his refusal to comply.

I write with the experience of having served as assistant architect to H.M.O.W. sixty years ago and later in collaboration with the Ministry; and I have also indisputable authority for saying that within such hatching organizations the official's gradual advance in rank sees his gradual divorce from his drawing board, till by the time he is top dog he is *entirely* employed in talking. Such activities are a far cry from the "practice of architecture" as once understood. We can all read in Mr. Hussey's memorial biography the manner in which Lutyens worked; and I can recall Aston Webb daily at his drawing board from 9.30 till 7, and have been told of Ernest George's sitting always aloof behind a closed door where his presence was known by the continuous racket of set-square knocking against T; and also of Norman Shaw with his rat-run from the family fireside up to the little cubby-hole where he could snug himself down to his board.

Well, the old order changes for better or for worse, but let us not forget the heritage of architects.

Perspective of the new Headquarters of The Rank Organisation Limited in Belgrave Road, S.W.1., wh'ch was opened recently by the Home Secretary. The architects are T. P. Bennett & Son.

The Modular Society Ltd.

Mr. Ezra D. Ehrenkrantz, B.Arch. (M.I.T.), at a public meeting of the Modular Society on 6th February, presented a paper entitled "Development of the Number Pattern for Modular Coordination; Flexibility Through Standardisation". Mr. W. A. Balmain, B.Sc., A.R.I.C., was in the chair and Mr. Ehrenkrantz was introduced by Mr. W. A. Allen, A.R.I.B.A., Superintending Architect of the Building Research Station. The meeting was perhaps the best attended since the inception of the Society; indeed, the meeting room at the Royal Society of Arts was very nearly full. There was a large number of students present and a representative selection of architects, engineers, planners and manufacturers combined to make the discussion one of the most lively in the history of the Society.

The paper, published in the Winter issue of the *Modular Quarterly*, had already been distributed among the members of the Society. Copies of this publication can be obtained, price 5s., from the Modular Society Ltd., 22 Buckingham Street, W.C.2.

Excerpts from the paper will be published in the A. & B. N. at a later date, if possible.

On the assumption that most people present at the meeting had read his paper, Mr. Ehrenkrantz only delivered a summary which he illustrated with slides. It became obvious that his own understanding of the numbers in his tables was hardly shared by members of the Society. During the course of the evening, when Mr. Bruce Martin spoke, it became apparent that there was a fundamental difference in procedure between the Building Research Station and the Department of Scientific and Industrial Research, another point that emerged from Mr. Martin's contribution was that " it is a happy fluke that the Modular Society has chosen the right figure," i.e. 4in. This was perhaps a bit unkind but will surely be of great satisfaction to the Society to know that the decision has been confirmed by such an important body — albeit that most of the Continental and American countries have already fixed on this figure or the equivalent, 10cms. Perhaps the surprise of the evening was the regard paid by the Building Research Station team to the significance of brick dimensions as an influence upon number pattern and the choice of a Module. When it is considered that brick construction forms about only 10 per cent. of building in the country today and is any way itself an extremely flexible medium, it is hard to understand the importance placed by the Building Research Station upon these dimensions.

Scottish Building Contracts

The Royal Incorporation of Architects in Scotland and The Scottish National Building Trades Federation (Employers) have set up a Scottish Building Contracts Advisory Board with the object of providing an authoritative body in Scotland to which reference may be made for guidance in the interpretation of the Regulations and General Conditions of Contract for Building Works in Scotland dated 1st September, 1954.

The Chairman of the Board, which had its first meeting on 31st January, is Mr. Lockhart W. Hutson, O.B.E., F.R.I.B.A., F.R.I.A.S., Hamilton, a Past President of the R.I.A.S. The Board is composed of an equal number of Architects and Building Contractors, with two Quantity Surveyors sitting as assessors.

The Secretary to the Board is Mr. Kenneth Macrae, W.S., 15 Rutland Square, Edinburgh.

I.A.A.S. Dinner and Dance

The London and Home Counties Branch of the Incorporated Association of Architects and Surveyors held their annual dinner and dance at the May Fair Hotel last week. Speeches were made by the Chairman of the branch, Mr. F. J. Meekins; Sir Alfred C. Bossom, Bart.; Mr. John Harrison, County Architect for Surrey, and Mr. Alexander. The President of the Association, Col. A. E. Henson, could not be present owing to illness.

The Association's new headquarters are to be opened by the Rt. Hon. Lord Mancroft on 27 February.

R.I.B.A. Special Final

Candidates who intend to apply for admission to the R.I.B.A. Special Final Examination are reminded that the age limit will be raised from 30 to 35 with effect from the 1st January, 1958.

ANNOUNCEMENT

On Mr. Cowan taking up the appointment of Head of the School of Architecture, Edinburgh College of Art, and Mr. Reiach relinquishing his teaching appointment, the association between Mr. Reiach and Mr. Cowan has been dissolved by mutual consent, except for their joint work on the new Edinburgh and East Scotland College of Agriculture.

Mr. Reiach and Mr. Cowan will continue to practice independently.

Royal Institute of British Architects

February 21 at 6 p.m. "Russian Architecture and Building 1955," an illustrated talk by J. H. Forshaw, C.B., M.C., M.A., B.Arch., F.R.I.B.A., M.T.P.I., F.I.L.A. and R. C. Bevan, M.A., B.Sc., A.R.I.C., Senior Principal Scientific Officer, Building Research Station. Chairman: Professor Basil Spence, O.B.E., A.R.A., A.R.S.A. At 66 Portland Place, W.1. Admission Free.

COMING EVENTS

The Association of Supervising Electrical Engineers

February 21 at 6.30 p.m. "Power from the Sun," by Miss M. V. Griffith, B.Sc., F.Inst.P., (The Electrical Research Association) at the Lighting Service Bureau, 2 Savoy Hill, W.C.2.

CORRECTION

The last date for applications to be submitted for the Truscon Travelling Scholarship is March 30th, and not March 12th as stated in last week's issue.

large roundabout and site no. **3**

ELEPHANT & CASTLE

L.C.C. Redevelopment & Road Improvement Scheme

AT a Council meeting last week the L.C.C. had before them the recommendations for a new road layout and re-development of the Elephant and Castle road intersection, the most important intersection South of the Thames. The area was defined for comprehensive development in the L.C.C.'s Development Plan and suffered extensive damage during the war. The proposals submitted are for carrying out road improvement; but the Town Planning Committee have in mind reconstruction of the area as a major shopping, business and social centre for South London and for this purpose an illustrated booklet has been prepared for distribution to applicants interested in developing sites. This article illustrates pictures of the model which shows the intention of the comprehensive scheme, and the plan shows the road layout and the sites to be developed.

Elephant & Castle Redevelopment

Road Works

The London Transport Executives are not proposing to carry out any major reorganisation of the underground railway stations and their entrances which are at road level, the road pattern has therefore been designed to avoid interference with the existing stations with subways for pedestrians.

The Island site of the larger roundabout will be an open sunken area at basement level in order to provide a wide pedestrian link between the two shopping centres and the underground stations and car-parking (100 cars approximately). Subways will be provided around the large roundabout with access for pedestrians from the five roads converging on it, and also under the three roads converging on to the smaller roundabout.

Except for the main shopping centre, car parking is expected to be provided within the curtilage of buildings.

Building Sites

Site No. 1 is intended to form the main shopping concourse with buildings 50ft. high. The existing

ROAD LAYOUT

Northern line station remains in its present position. Site No. 2 is substantially for commercial and office buildings, the frontage to the Trocadero Cinema being used for showrooms, it is suggested. Site No. 3 will contain a tall office block to close the main vista; on either side will be shopping parades which may continue in front of the roundabout with probably five floors of offices above. The existing underground station is to remain in its present position. Site No. 4 will be re-developed for shopping and commercial purposes, the provision of flats in part of the block is being considered. Site No. 5 is considered suitable for office and commercial buildings, possibly with showrooms.

Cost and Programme

Capital expenditure of £2,075,000 for the acquisition of some 16½ acres of land for re-development including all the land required for roadworks during the next five years was approved by the Council in March, 1955.

The corporation have now been asked to approve estimates for the road scheme as follows, road works, £140,000, subways, £170,000. Diversion and layout of mains, £205,000. A total of £515,000 which should rank for a 75% grant.

The first stage is expected to concern the roads development, the small roundabout, the widening of Newington Butts and Draper Street and the closing of Walworth Road. This will be followed by the construction of the large roundabout, and the improvement of the approaches. This work is expected to be completed within five years.

The redevelopment proposals have been prepared and will be carried out under the direction of:— J. Rawlinson, C.B.E., Chief Engineer and County Surveyor—Road improvements, sub-ways, lighting. J. L. Martin, Architect to the Council—Planning and design. J. E. J. Toole, Valuer to the Council—Acquisition of land; negotiation of building agreements and leases.

Electrical Space Heating Appliances—II

This is the fourteenth article of the series which are appearing once a month dealing with building accessories. The next article will deal with mechanical plant.

Domestic Electric Convector & Panel Heaters

by J. I. BERNARD, Chief Technical Officer to the British Electrical Development Association

THE first part of this article (A. & B. N., 15.12.55) reviewed trends in domestic heating practice and the value of radiant heat especially in houses and flats where the main heating is often intermittent. An electric fire quickly counteracts the chill from walls and windows and makes a room comfortable provided that the mean temperature of the surroundings has not fallen too low. Electric fires were described and illustrated in the previous article and the second part, which follows, deals with convectors, low temperature radiant panels and other forms of heater suitable for more continuous heating, either for 'background' or full 'central heating' duty.

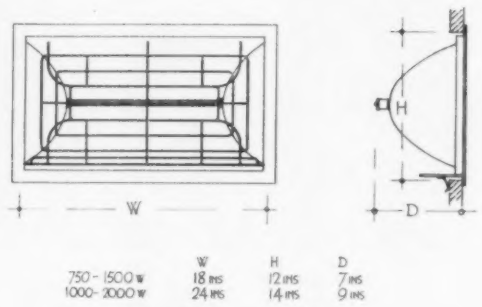
Tubular Heaters

One of the earliest types of "low temperature" electric heaters was the tubular heater, which consists of a round or oval tube as shown in Fig 5, containing a heating element operating at black heat and producing, with the usual loading of 60 watts per foot run, a surface temperature of approximately 180deg F. Heaters of this kind are excellent for checking down draughts from large windows, and in domestic premises a double or triple bank of tubes mounted in a portable stand, when placed at the foot of french windows, will counteract chilling effects of the cold glass and provide some background heating in the room.

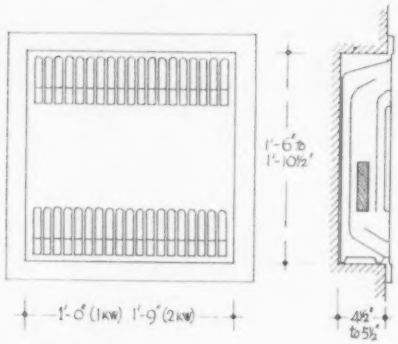
Care must be taken always that clothing is not draped over, or allowed to fall on, tubular heaters because of the danger of scorching. Towel rails and airing cupboard heaters are dealt with later, but in the meantime it should be noted that electric heating appliances will always give all the full amount of heat they are rated to produce and if a tubular heater, for example, is covered the same amount of heat will be developed with the result that the temperature will go on rising until it can escape at the same rate as before. In other words it is essentially different from a hot water pipe which, if it is lagged, will merely give out less heat; clothes should only be aired on electric heaters intended for this purpose otherwise danger of fire is bound to arise.

Convectors

In domestic premises a more compact form of air warmer is the convector which consists of a metal or

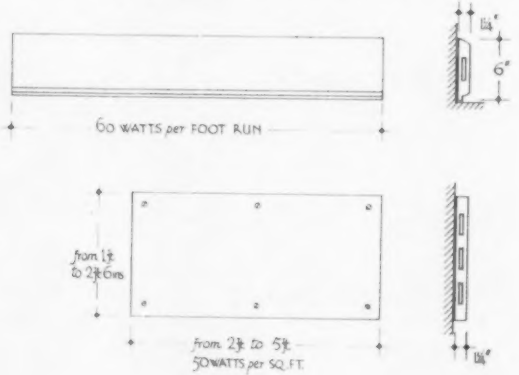


4a. *Inset reflector type fire.*



4b. *Inset convector.*

4c. *Low temperature radiant panels for mounting on surface of walls and skirtings.*



moulded case containing a heating element. Cool air is drawn in at floor level, warmed by the heater and discharged through a grill at the top, Fig 4b. A thermostat can be fitted near the bottom so as to respond to the temperature of the incoming air. The casing is not uncomfortably hot and as the heating element is out of reach it is the safest form of heater for use in nurseries. As in the case of tubular heaters, however, clothes must not be hung over a convector so as to restrict the air flow. Convectors are made in inset patterns for mounting in a recess, the back of the convector being insulated so as to prevent unnecessary losses of heat. Alternatively, the convector can be fixed to the surface of the wall as in Fig 7.

As they are generally similar in effect to hot water "radiators", convectors should be installed under windows in order to obtain the most even distribution of heat from one side of the room to the other, depending as they do on rising currents of hot air, convectors are inclined to produce a higher temperature at the ceiling than at floor level; an excessive temperature difference of this kind is likely to cause a feeling of stuffiness. In a small house, however, the convective effect can be utilised to advantage if a convector is fixed in the hall where much of its heat will rise to air the bedrooms.

In order to improve the distribution of heat some convectors are fitted with fans which are intended to blow the hot air across the floor so warming the feet and producing a better distribution of temperature in the vertical plane.

Typical loadings are 1 to 2kW and a typical size for the latter is 20in × 9in × 24in high.

Radiators

The term "radiator", although incorrect, since most of the heat is given off by convection, has become so firmly attached to the type of appliance used in central heating by hot water that it continues to be used for the same kind of appliance when filled with water or oil and heated by a small heating element built into the lower part. The object of using oil instead of water is to avoid evaporation and to distribute the heat more readily over a larger surface area. In addition it is free from the danger of freezing when not in use.

The casing is usually made of pressed steel welded. Models are available for floor or wall mounting, also in transportable form. Thermostats can be fitted to provide some measure of automatic control although more precise regulation is obtained for fixed installations by means of a separate thermostat mounted on a wall. Loadings vary from .5 to 2kW and a wide variety of sizes can be obtained.

Radiant Panels

In any low temperature heater, the greater the surface area facing the room the greater the proportion of heat given off in the form of radiation. This, as mentioned earlier, is more useful in domestic premises to raise the mean temperature of the surroundings which are bound to include a fairly large proportion of cold wall and window and liable to have a chilling effect on the

Fig. **5.** *Oval tubular heaters under window sill to check down draughts.*

Fig. **6.** *Thermostatically controlled convector inset under window and small reflector fire inset in side wall.*

Fig. **7.** *Outset convector in one of the cabins of the S.S. "Orcades."*

Domestic Electric Convector & Panel Heaters

human body. The only difficulty in designing radiant panel heaters is that in order to provide a substantial amount of radiant heat the flat surface must be rather inconveniently large or else an increased loading must be applied to raise the temperature, in which case touching it must be prevented by a suitable guard or screen. Both methods are used and in one design the back of the panel forms, as it were, one side of a convector so that heat radiated from the back of the panel is turned into convected heat and there is no loss if it is fixed to the wall.

Panel heaters are generally of .75, 1.0 and 1.25kW, but these comparatively small loadings are quite sufficient to prevent the mean radiant temperature in domestic premises falling to such a low value that rooms are uncomfortably chilly and cannot be brought to conditions of comfort in a reasonably short time.

Floor Heating

Low temperature radiation is carried a stage further in the direction of lower temperature and more extended surface by heating the floor itself. Not only does a warm floor emit a high proportion of radiant heat but the floor also warms the feet by conduction and this in conjunction with the relatively low air temperature promotes the warm feet and cool head effect which is recognised as ideal. Although floor warming has been employed to a greater extent in commercial premises and institutions than in domestic premises, it can be used to provide a certain amount of background heating and is specially useful in bungalows where the bedrooms tend to become more chilly than when they are on an upper floor and receive stray warmth from the living quarters below.

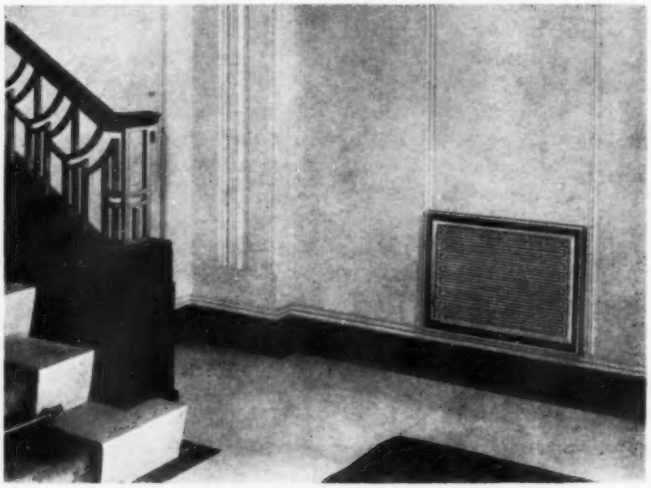
The total amount of heat that can be supplied from a floor is governed by the maximum floor temperature which should not be in excess of 75deg F otherwise it would be uncomfortably hot for the feet.

A loading of about 12 watts per square foot of floor area is generally suitable. As with other methods of warming, good structural insulation is important and a concrete floor slab resting on the ground should be insulated around its edges and preferably under a perimeter strip two or three feet wide; the heat loss downwards through the centre of the floor slab is practically negligible.

Most of the finishes used on a solid concrete floor are suitable when electric floor warming is installed. Wood strip or blocks should be kiln dried and preferably left spread out on the warmed floor before laying. Incidentally, the early connection of the floor heating circuits to the supply greatly assists in drying out a house during the later stages of construction. Tiles are quite suitable but mastic finishes are not recommended. Rugs do not affect the heat output of the floor but close carpeting is not recommended.

Fig. 8. Low temperature radiant panel mounted on surface of wall.

Fig. 9. Low temperature radiant glass panel mounted on surface of wall in hall.



There are various methods of warming the floor but in all cases the heating wires or cables are laid on top of the surface concrete and covered by 1½in to 3in of dense concrete screed according to the floor finish. In one system special heating cables are directly embedded in the concrete, in another a patented system of semi-circular conduits is used connected to a floor trough to enable the heating cable to be withdrawn and replaced in the event, unlikely though it may be, of a cable fault occuring.

In small domestic installations electric floor warming is generally controlled by ordinary room thermostats, one to each circuit; further economy in operation may be obtained by fitting manually controlled switches so that one or more circuits can be switched off in mild weather.

Towel Rails and Other Auxiliary Heaters

In the all-electric house provision must, of course, be made for airing clothes and towels which would

FIRMS MENTIONED IN THE TABLES

ARTIC FUSE & ELECTRICAL MFG. CO. LTD.,
Birtley, Co. Durham. Birtley 61.
BELLING & CO. LTD.,
Bridge Works, Southbury Road, Enfield, Middx. Howard 1212.
BENHAM & SONS LTD.,
66 *Wigmore Street, London, W.*1. *Welbeck* 9253.
BERRY'S ELECTRIC LTD.,
*Touchbutton House, Newman Street, London, W.*1. *Museum* 6800
BESCOL ELECTRIC LTD.,
Parkfield Road, Birmingham 8. *East* 3281.
BRITISH NATIONAL ELECTRICS LTD.,
Newarthill, Motherwell, Lanarkshire. Motherwell 909.
E. K. COLE LTD.
Ekco Works, Southend-on-Sea, Essex. Southend 49491.
DIMPLEX LTD.,
Totton, Southampton, Hants. Totton 2481.
THOS. DRYDEN & SONS LTD.,
Grimshaw Street Foundry, Preston. Preston 4677.
DULRAE LIMITED,
Griffin Lane, Aylesbury. Aylesbury 1288.
ELECTROWAY HEATERS LTD.,
Loughborough, Leicestershire. Loughborough 4381.
GILLOTT ELECTRO APPLIANCES LTD.,
Cotswold Works, Chalford, Nr. Stroud, Glos. Brimscombe 2276.
HEATOVENT ELECTRIC LTD.,
*Lomond Street, Glasgow, N.*2. *Possil* 8321.
HEATRAE LTD,
Heatrae Works, Norwich, Norfolk. Norwich 25131.
HOBOURN DOMESTIC APPLIANCES LTD.,
Strood, Rochester, Kent. Strood 7626.
C. HOUNSLOW & CO. LTD.,
Chalex Works, Southwick, Sussex. Hove 48822.
HURSEAL LTD.,
229, *Regent Street, London, W.*1. *Regent* 1051.
H. G. POXON ENGINEERING LTD.,
1, 3 & 5 *Northolt Road, Harrow, Middx. Byron* 5120.
STEEL RADIATORS LTD.,
Stelrad Works, Bridge Road, Southall, Middx. Southall 2603.
UNITY HEATING LTD.,
Chilworth Manor, Southampton. Southampton 68844.
WALSALL CONDUITS LTD.,
Excelsior Works, West Bromwich. Tipton 1171.
THE WARDLE ENGINEERING CO. LTD.,
Old Trafford, Manchester 16. *Trafford Park* 1801.
YELSEN LTD.,
Sidcup, Kent. Footscray 4441/2.

Appliances mentioned in this article do not include those which can only be attached to the building by plug and flexible cable.

British Standards

B.S.816 : 1952. Requirements for Electrical Appliances and Accessories (applies to all electrical appliances and accessories such as switches and socket-outlets not more specifically covered by other British Standards).
B.S.1670 · 1951. Safety Requirements for Electric Fires.
B.S.1945 : 1953. Fireguards for heating appliances.

Codes of Practice

C.P.321. Electrical Installations—General.
C.P.321.101. Choice, Installation and Maintenance of Electric Wiring Systems.
C.P.324.201. Installation of Domestic Electric Space-Heating Equipment.

Regulations

Regulations for the Electrical Equipment of Buildings issued by the Institution of Electrical Engineers.

otherwise be done by a hot water system of heating. For the bathroom there are numerous designs of wall or floor mounting towel rails or airers, most of which have a small electrical loading of only 100 watts or so and therefore their output is insufficient for space heating which is better done by a reflector type electric fire mounted high up on the wall out of reach and tilted to shine on a person using the wash basin.

For linen cupboards, small heaters and air warmers are available fitted with perforated metal or wire guards so that, having regard to their low loading of 100 watts or so, there will be no danger of scorching even though clothes should fall on to them. Some means of drying tea cloths in the kitchen is also required and this may be done by a similar small heater. Alternatively, a convector may be used for space heating in the kitchen and models are available with extending towel rails for drying a small amount of washing. For general home laundry purposes an electrically heated drying cupboard or cabinet should be employed.

Inset Thermovent by E. K. Cole Ltd.

Medrae radiant panel, by Dulrae Ltd.

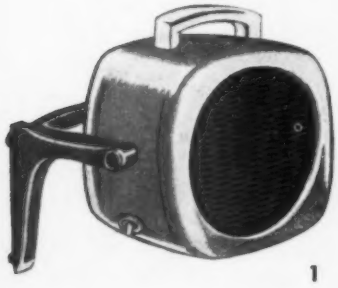
Electric Convector and Panel Heaters

The following abbreviations are used in the tables: Al—aluminium, B—bronze, Be—beige, Bl—black, Br—brown, Bu—blue, C—cream, Ch—chocolate, Cr—chromium, DO—dark oak, Edn—eau-de-nil, En—enamel, G—green, Go—gold, Gy—grey, La—lacquer, M—maroon, P—pink, Pe—peach, Pl—plastic, Py—penny, R—red, S—silver, Sn—stone, St—stoved, VE—vitreous enamel, W—white, Wa—walnut.

Supplier	Name or Model	Type	Total Loading	Overall Dimensions H × W × D in inches	Finish	Remarks
ARTIC FUSE & ELECTRICAL MFG. CO LTD.	Thermo Airflow Convector	Floor fixing	½ & ¾ kW	26½ × 9¾ × 6¾	Go	Can be provided with illuminated artistic grille. May be fitted with one switch for single heat control.
		Floor fixing	1 & 1½ kW	29½ × 13¾ × 6¾	Go	As above
		Floor fixing	2, 2½ & 3 kW	29½ × 24¼ × 6¾	Go	Can be provided with illuminated artistic grille. May be fitted with two switches for two heat control.
BELLING & CO. LTD.	Zephyr Convector	Wall fixing	1 kW	22¼ × 18 × 6¼	B	Can be fixed to wall by concealed screws. Can also be supplied with thermostats. Cat. No. 851F.
		Wall fixing	2 kW	22¼ × 32 × 6¼	B	As above. Cat. No. 852F
		Wall fixing	3 kW	22¼ × 45 × 6¼	B	As above. Cat. No. 853F.
	Warm Air Circulator	Wall fixing	¾ kW	23½ × 6 × 5	S B	Fixed by two concealed screws. Cat. No. 85
		Wall fixing	1½ kW	23½ × 12 × 5	S B	Fixed by two concealed screws. Cat. No. 86
		Corner fixing	¾ kW	23½ × 9 × 6½	S B	Fixed by two concealed screws. Cat. No. 87
	Air Warmer	Wall or floor mounting	½ kW	8 × 13¾ × 3¼	Bl	Non-luminous heater of cast iron. Surface consists of a number of projecting fins providing large heating area. Totally enclosed element. Suitable for heating passages, workrooms, darkrooms, garages, etc. Cat. No. 961A
		Wall or floor mounting	1 kW	8 × 18 × 3¾	Bl	As above. Cat. No. 962A
	Handy Heater	Wall or floor mounting	¼ kW	13 L × 5 H × 4½ Dia.	B	Suitable for garage, workshops, airing cupboard etc. Cat. No. 952
	Towel Airer	Wall fixing	90 Watts	18 × 14 × 6	C	Cat. No 104. Also available as portable model.
		Wall fixing	150 watts	18 × 23½ × 6	C	Cat. No. 105. Also available as portable model.
BENHAM & SONS LTD.	Pall Mall	Electro-vapour radiator	¾ kW	22 × 17 × 5½	Al, B	Partly filled with water and fitted with immersion electric elements. Cat. No. 3 PR
		As above	1 kW	22 × 21 × 5½	Al, B	As above. Cat. No. 4PR
		As above	1½ kW	28 × 27 × 5½	Al, B	As above. Cat. No. 6PR
		As above	2 kW	28 × 31 × 5½	Al, B	As above. Cat. No. 7PR
		As above	2 kW	28 × 21 × 8½	Al, B	As above. Cat. No. 7PS
		As above	2½ kW	28 × 27 × 8½	Al, B	As above. Cat. No. 8PS
		As above	3 kW	28 × 33 × 8½	Al, B	As above. Cat. No. 9PS
	Hospital	As above	1 kW	28 × 20 × 5½	Al, B	As above. Cat. No. 4H
		As above	1½ kW	34 × 23 × 8	Al, B	As above. Cat. No. 6H
		As above	2 kW	34 × 28 × 8	Al, B	As above. Cat. No. 7H
		As above	2½ kW	34 × 33 × 8	Al, B	As above. Cat. No. 8H
		As above	3 kW	34 × 38 × 8	Al, B	As above. Cat. No. 9H
BERRY'S ELECTRIC LTD.	Raydair	Wall mounting radiator	1 kW	20 × 26 × 7½	Pe B, Py B	Fitted with pre-set thermostat. Provides both radiation and convection heating. Cat. No. 880/1. Portable also available.
		As above	1½ kW	20 × 26 × 7½	Pe B, Py B	As above. Cat. No. 880/1½
		As above	1½ kW	20 × 34 × 7½	Pe B, Py B	As above Cat. No. 880/1½
	Raydair	Wall mounting radiator	1 kW	20 × 22½ × 7½	Pe B, Py B	Fitted with variable thermostat. Provides both radiation and convection heating. Cat. No. 890/1. Portable also available
		As above	1½ kW	20 × 30½ × 7½	Pe B, Py B	As above. Cat. No. 890/1½
		As above	2 kW	20 × 45 × 7½	Pe B, Py B	As above. Cat. No. 890/2
BESCOL ELECTRIC LTD.	Oval	Tubular heater	80 watts per foot	From 2 to 16ft long	B or Sn La	Supplied in either 1, 2, 3 or 4 tiers. For wall or floor fixing. Thermostats extra.
	Round	Tubular heater	60 watts per foot	As above	B or Sn La	As above
BRITISH NATIONAL ELECTRICS LTD.	B.N.E.	Tubular heater	60 watts per foot	From 2 to 17 ft long	Br	Supplied in either 1, 2, 3 or 4 tiers. For wall or floor fixing

Supplier	Name or Model	Type	Total Loading	Overall Dimensions H × W × D in inches	Finish	Remarks
E. K. COLE LTD.	S R 1	Wall fixing convector	1 kW	23 × 15⅛ × 8¼	B, St. En	Primarily a portable model but key-hole slots are provided at the back for alternative wall mounting. Non-thermostat.
	S R 2	As above	2 kW	23 × 24⅛ × 8¼	B, St En	As above but with switch
	S R 3	As above	3 kW	23 × 24⅛ × 8¼	B, St En	As above
	S R C 1	As above	1 kW	23 × 15⅛ × 8¼	B, St En	As above but with thermostat (AC only)
	S R C 2	As above	2 kW	23 × 24⅛ × 8¼	B, St En	As above
	S R C 3	As above	3 kW	23 × 24⅛ × 8¼	B, St En	As above
	B 1	Inset convector	1 kW	Panel: 22½ × 14½ × 1½ Recess: 18½ × 12⅝ × 5½	Panel: Bl or Wa Pl Grilles: Go	Suitable for mounting in walls, partitions, or in furniture. Non-Thermostat
	B C 1	As above	1 kW	As above	As above	As above but with thermostat (AC only)
	B C 2	As above	2 kW	Panel: 22½ × 23½ × 1½ Recess: 18½ × 21 × 5½	As above	As above
	B 2	As above	2 kW	As above	As above	As above but non-thermostatic
	HTP/04	Suspension panel	1½ kW	24 × 12	C V E	Heat output mainly radiant. Comprises a steel tray with nickel-chrome element and glass fibre insulation. Suspended on chains at about 9/12 ft from floor level.
	HTP/05	As above	0.625 kW	12 × 12	C V E	As above
	HTP/07	Horizontal or vertical wall mounting	1½ kW	24 × 12	C V E	As above but usually mounted about 7ft 6in on a wall at an angle of 30 deg.
	HTP/08	Wall mounting	0.625 kW	12 × 12	C V E	As above
	HTP/01	Low level wall mounting	1½ kW	14½ × 27 × 5½	C V E	As above but secured parallel to wall by brackets. A safety guard of stout wire mesh provided.
	HTP/02	As above	0.625 kW	14½ × 15 × 5½	C V E	As above
	RG75	Radiant glass panel	¾ kW	16⅜ × 24⅜ × 1¼	Edges: B	Element fused directly on to armour plate glass. Unframed. Should be mounted 9/12 in from floor level.
	RG 1	As above	1 kW	16⅜ × 32⅜ × 1¼	Edges: B	As above
	RGF 75	As above	¾ kW	19⅜ × 27⅜ × 2	Edges B	As above but with wall frame
	RGF 1	As above	1 kW	19⅜ × 35⅜ × 2	Edges: B	As above
	Thermotube	Tubular heater	60 watts but 80 watts for 1 ft tube	From 1 to 12 ft long but up to 15 ft to special order	Gy, Br	Supplied in 1, 2, 3 or 4 tiers. For wall or floor fixing. Thermostats extra
DIMPLEX LTD	A 38	Panel, oil-filled radiator with wall brackets	½ kW	20⅛ × 26 × 3½	St En: W, C, S Gy, Go, Bu, B, P, Edn	Overall length includes thermostat. Permanenty oil-filled and hermetically sealed. Detachable towel rails available. Also supplied with feet or castor wheels.
	B.48	As above	¾ kW	26½ × 26 × 3½	As above	As above
	B.310	As above	¾ kW	20½ × 31½ × 3½	As above	As above
	B.216	As above	¾ kW	14½ × 47½ × 3½	As above	As above
	C.412	As above	1 kW	26½ × 36⅜ × 3½	As above	As above
	C.220	As above	1 kW	14½ × 57⅜ × 3½	As above	As above
	ER.316	As above	1½ kW	20½ × 47½ × 3½	As above	As above
	D.416	As above	1½ kW	26½ × 47½ × 3½	As above	As above
	D.320	As above	1½ kW	20½ × 57⅜ × 3½	As above	As above
	E.420	As above	2 kW	26½ × 57⅜ × 3½	As above	As above
	100	Column, oil-filled radiator with wall fixing bolt	1 kW	21 × 21½ × 6	As above	As above

CONVECTORS



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1. *Fan-heater by Gillott Electro Appliances Ltd.*

2. *Chalex, by C. Hounslow & Co. Ltd.*

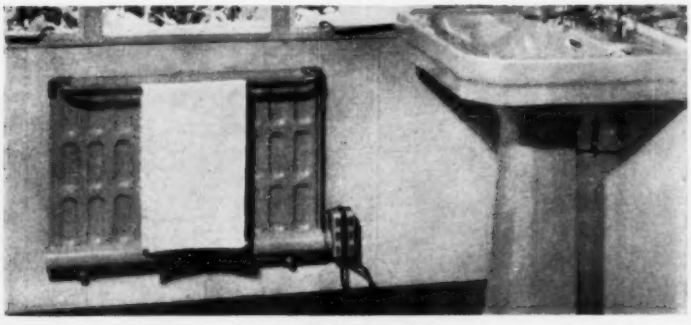
3. *Zephyr, by Belling & Co. Ltd.*

2

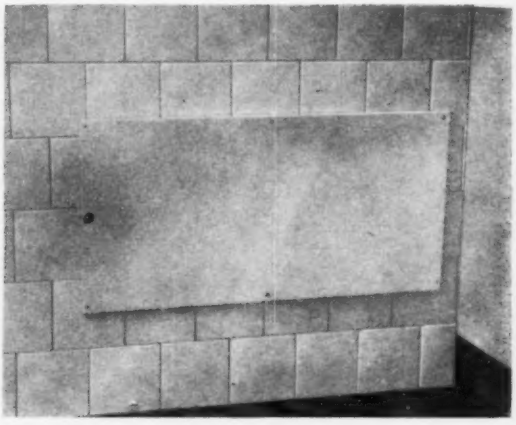
3

Electric Convector and Panel Heaters

Supplier	Name or Model	Type	Total Loading	Overall Dimensions H × W × D in inches	Finish	Remarks
DIMPLEX LTD. (continued)	150	As before	1½ kW	21 × 30 × 6	As before	As before
	200	As above	2 kW	21 × 39½ × 6	As above	As above
THOS. DRYDEN & SONS LTD.	DAM/2 Major	Floor fixing radiator	2 kW	28 × 34 × 4½	Br, Gy, En	Designed for use in large rooms, workshops etc. Two elements required.
	DAM/3 Major	As above	3 kW	28 × 34 × 4½	Br, Gy, En	As above
	DA/S, DA/IS, DA/2V	Floor fixing radiators	½, 1 & 2 kW	20 × 17 × 4	C, W, G, Br, Gy	May be fitted with two types of towel rail. Also supplied with feet or castors.
	DKF1, DKF2, DINKIE	Floor mounting radiators	½ & ¾ kW	14 × 16 × 3	C, W, G, Br, VE	As above
	DKW1, DKW2, DINKIE	Wall mounting radiators	½ & ¾ kW	14 × 16 × 3	C, W, G, Br, VE	As above
	ARO/500/S AIRO	Floor or wall mounting radiator	½ kW	18½ × 13½ × 2	C, W, G, Br, Gy, S	Low priced standard radiator Towel rails can be fixed. May also be supplied as portable type if required.
	ARO/750/S AIRO	As above	¾ kW	18½ × 13½ × 2	As above	As above
	ARO/1000/S AIRO	As above with two elements	1 kW	18½ × 27 × 2	As above	Low priced standard radiator. Towel rails can be fixed. May also be supplied as portable type if required.
	ARO/1500/S AIRO	As above	1½ kW	18½ × 27 × 2	As above	As above
	ARO/250/LS AIRO	Floor or wall mounting radiator	¼ kW	18½ × 13½ × 2	As above	Low priced, low surface temperature radiator. Towel rails can be fixed. May also be supplied as portable type if required.
	ARO/500/LS AIRO	As above	½ kW	18½ × 27 × 2	As above	As above
	ARO/750/LS AIRO	As above	¾ kW	18½ × 27 × 2	As above	As above
OULRAE LTD.	Medrae AZ	Radiant heating panel	0.85 kW	47¾ × 23¾ × ⅛	Natural colour for site decoration	For low level wall mounting. Supplied undrilled and with square corners for erecting into slotted wooden rail fixings of standard design. Resin bonded asbestos faced each side with hardboard.
	Medrae AY	As above	0.40 kW	47¾ × 11¾ × ⅛	As above	As above
	Medrae AX	As above	0.275 kW	47¾ × 8¾ × ⅛	As above	As above
	Medrae AW	As above	0.55 kW	31¾ × 23¾ × ⅛	As above	As above
	Medrae AV	As above	0.250 kW	31¾ × 11¾ × ⅛	As above	For low level wall mounting. Supplied undrilled and with square corners for erecting into slotted wooden rail fixings of standard design. Resin bonded asbestos faced each side with hardboard.
	Medrae AU	As above	0.425 kW	23¾ × 23¾ × ⅛	As above	As above
	Medrae AT	As above	0.250 kW	23¾ × 15¾ × ⅛	As above	As above
	Medrae AS	As above	0.175 kW	23¾ × 11¾ × ⅛	As above	As above
	Medrae AR	As above	0.080 kW	11¾ × 11¾ × ⅛	As above	As above
	Medrae BZ (S)	As above	1.800 kW	47¾ × 23¾ × ⅛	As above	For high level wall mounting. Supplied undrilled and with square corners for erecting into slotted wooden rail fixings of standard design but can also be drilled for fixing with distance pieces or on angle brackets. Resin bonded asbestos throughout.



Oil filled radiator by Dimplex Ltd.



Herga warming panel by H. G. Poxon Engineering Ltd.

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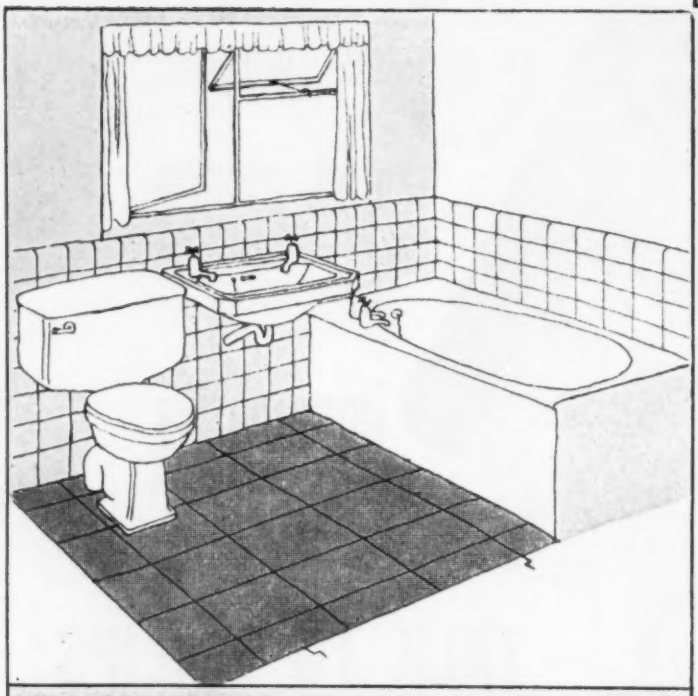
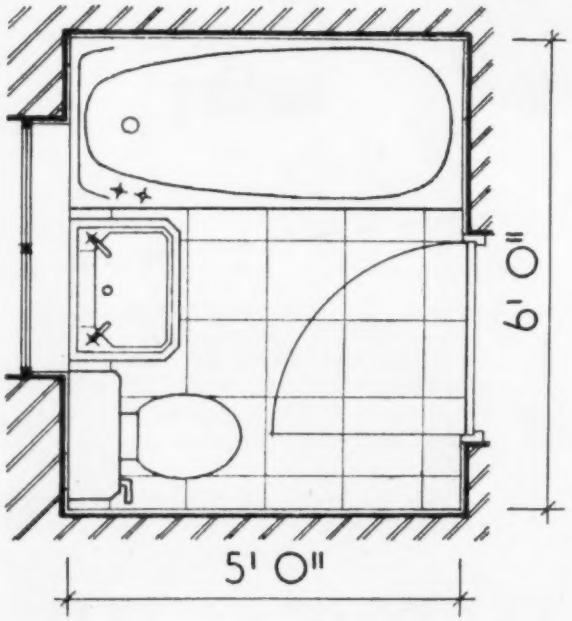


The COMPAC Bath

saves the day in a bathroom 6′ x 5′



For further information about the Compac Bath write to the Housing Division of :

NOTES :

In the ordinary way, a bathroom of these measurements, with all pipe-work on the 6′ wall, is obviously going to be 'on the tight side'. But there is nothing cramped or skimped about this one.

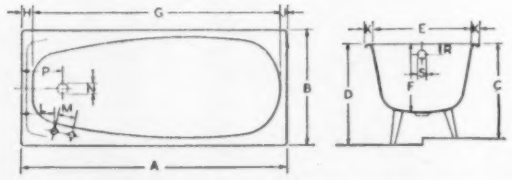
The lavatory basin and low-level w.c. suite are of standard sizes, and nothing is chased or recessed into the wall; the door is hinged.

Only the Compac bath makes all this possible. It is a most ingenious piece of design.

SPECIFICATION :

The " COMPAC " Rectangular Top Bath, porcelain enamelled inside, plain painted outside; $\frac{3}{4}$″ taps; $1\frac{1}{4}$″ overflow; $1\frac{1}{2}$″ waste, plug, chain; and $1\frac{1}{2}$″ glass enamelled cast iron trap, above floor.

The inside contour of the " COMPAC " Bath is specially designed to give maximum bathing comfort with minimum water consumption. The arrangement of taps on the front roll greatly simplifies the plumber's work in making connections, and makes cleaning easier.



A	B	C*	D	E	F
5′ 0″ 1524 m.m.	2′ 2″ 660 m.m.	1′ 9½″ 546 m.m.	1′ 11″ 584 m.m.	1′ 10½″ 572 m.m.	1′ 3½″ 394 m.m.
G	H	J	K	L	M
4′ 8″ 1422 m.m.	2½″ 64 m.m.	1½″ 38 m.m.	1¾″ 45 m.m.	7¼″ 184 m.m.	4″ 102 m.m.
N	P	R	S		
2¼″ 57 m.m.	9¼″ 235 m.m.	2⅜″ 60 m.m.	1⅞″ 48 m.m.	* Standard Height unless No. 3A Foot is specified	

The internal length is only 3″ shorter than the standard " Magna " bath, and the depth of water is the same. The bath itself is $1\frac{1}{2}$″ lower than standard, which makes it easier of access for the old or infirm and more convenient for bathing children.

Notable plumbing features are :

★ Far shorter fixing time because tap connections are easier.

★ The bath is designed to take the well-known "Cobra" combined waste-overflow fitting, which again reduces fixing time.

★ The underside of the roll of the bath is arranged to take a vertical panel without the usual wooden framing. This panel can be fitted with small steel brackets which are quickly screwed to the floor.

NOTE : Allied Ironfounders are NOT the makers of the panel, the lavatory basin or low level w.c. suite appearing in this bathroom, but sources of supply can be provided.

ALLIED IRONFOUNDERS LTD

Makers of cookers, boilers, fires and baths

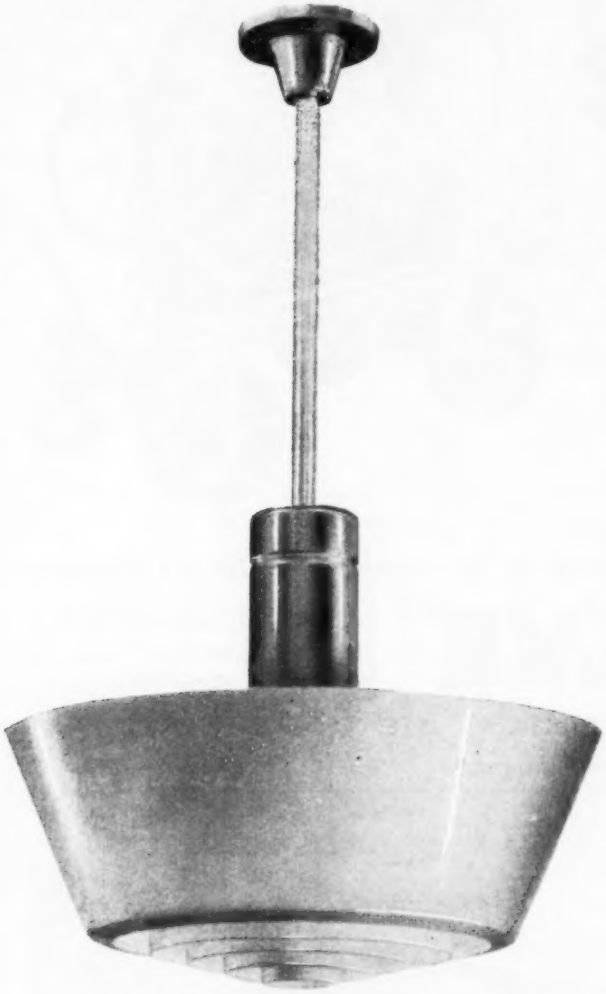
28 Brook Street, London, W.1.

Electric Convector and Panel Heaters

Supplier	Name or Model	Type	Total Loading	Overall Dimensions H W D in inches	Finish	Remarks
DULRAE LTD. (continued)	Medrae BY (S)	As before	0.85 kW	47⅞ 11⅞ ⅝	As before	As before
	Medrae BW (S)	As above	1.100 kW	31⅞ 23⅞ ⅝	As above	As above
	Medrae BZ	As above	0.850 kW	47⅞ 23⅞ ⅝	As above	As above
	Medrae BY	As above	0.400 kW	47⅞ 11⅞ ⅝	As above	As above
	Medrae BX	As above	0.250 kW	47⅞ 7⅞ ⅝	As above	As above
	Medrae BW	As above	0.550 kW	31⅞ 23⅞ ⅝	As above	As above
	Medrae BV	As above	0.250 kW	31⅞ 11⅞ ⅝	As above	As above
	Medrae BU	As above	0.425 kW	23⅞ 23⅞ ⅝	As above	As above
	Medrae BS	As above	0.175 kW	23⅞ 11⅞ ⅝	As above	As above
	Medrae BR	As above	0.080 kW	11⅞ 11⅞ ⅝	As above	As above
ELECTROWAY HEATERS LTD.	C2 & C21	Floor fixing Convector	2 kW	30 21 6	B with Cr Grille	Detachable floor fixing brackets are provided. Model C2 is non-illuminated and C21 illuminated. Alternative colours available.
	C3 & C31	As above	3 kW	30 21 6	As above	As above but C3 is non-illuminated and C21 illuminated
	CW2 & CW21	Wall mounting convector	2 kW	26½ 24 6	As above	Detachable side fixing brackets are provided. Model CW2 is non-illuminated and CW21 illuminated. Alternative colours available.
	CW3 & CW31	As above	3 kW	26½ 24 6	As above	As above but CW3 is non-illuminated and CW31 illuminated
GILLOTT ELECTRO APPLIANCES LTD.	"Cotswold" Standard	Wall mounting fan heater	1½ kW	13½ 10 7½	Body: B Grille: Go Stand: M	Element is switched to enable "Cotswold" to be used either as a fan or heater. Element protected by safety device. Bracket for wall mounting supplied with each heater but primarily portable.
	"Cotswold" De Luxe	As above	1½ kW	13½ 10 7½	Gy	As above but silence obtained by two speed motor with separate switch and indicator lamp provided to give warm glow when element is switched on
HEATOVENT ELECTRIC LTD.	Tuvec	Hexagonal heater	150 watts per ft	From 2 to 8 ft long	Al, Br, Bl, R., DO	Supplied in 1, 2 or 3 tiers. For floor or wall fixing. Combines convection and radiant heating. Totally enclosed element.
	Recessed Heater	Wall mounting convector	1 kW	Panel: 26 21 Recess: 23 18 6	Several	Can be made to other dimensions and loadings. Sheet steel construction throughout. Three patterns available: (a) skeleton type comprising slabbing box with internal unit, inlet and outlet grilles. Panelling carried over the unit on site. (b) As for (a) but with detachable sheet steel front panel. (c) Semi-recess unit with front panel as for (b) but fitted with wooden moulding to give any desired projection up to 4 in
	Recessed Heater	Wall mounting convector	1 kW	Panel: 18 18 Recess: 15 15 6	Several	As above
	Metal	Wall mounting convector	1 kW	16 15½ 5½	Br, Go, B	Totally enclosed element. Primarily a portable convector this model can be fixed to the wall by brackets
	Metal	As above	1½ kW	18½ 18 6	As above	As above
	Metal	As above	2 kW	23 18 6	As above	As above
	Metal	As above	3 kW	23 24 6	As above	As above
	General Purpose Air Warmer	Floor or wall mounting	½, ¾ & 1 kW	17 8 4½	Bl, St En	Non-luminous heater of cast iron. Surface consists of a number of projecting fins providing large heating area. Can be mounted singly or in banks as required
HEATRAE LTD.	2405 & 2410	Wall fixing convector	½ & 1 kW	30½ 14 5	Bl, Gy, Br, Be, S, B	Four holes provided in the back for fixing screws which are not visible when the cover is in position. The grille may be illuminated by a lamp
	2415 & 2420	As above	1½ & 2 kW	30½ 26 5	As above	As above
	2425 & 2430	As above	2½ & 3 kW	30½ 38 5	As above	As above
HOBOURN DOMESTIC APPLIANCES LTD.	W.H.1	Wall mounting convector	1½ kW	18 19½ 4½	Several St En	Fitted with switch. Patent element consists of glass fibre insulated electric cords spaced over ceramic formers
	W.H.2	As above	1½ kW	18 19½ 4½	As above	As above but without switch
	W.H.3	As above	1½ kW	18 19½ 4½	As above	As above but with thermostatic control
C. HOUNSLOW & CO. LTD.	Wall type 5 & 6	Wall mounting convector	1 & 2 k W	23½ 17 5½	B, St En	Can be easily fitted to any wall. Has been supplied for many Council housing schemes. Height at front 19½ in
	Dual purpose Wall type 12 & 15	Wall mounting convector and radiant heater	No.12: 1kW Convection 1kW Radiant No.15: 2kW Convection 1kW Radiant	23½ 17 5½	B, St En	Height at front 19½ in. Can be easily fitted to any wall. Has two switches to control convection and radiation separately

Electric Convector and Panel Heaters

Supplier	Name or Model	Type	Total Loading	Overall Dimensions H × W × D in inches	Finish	Remarks
C. HOUNSLOW & CO. LTD. *continued*	Panel Inset 7 & 26	Inset convector	2 & 3 kW	Panel: 19½ × 21½ × 1⅛ Inset box: 16½ × 18½ × 4½	Wa or Be with Al louvres	Constructed for flush faced fitting in walls. With thermostat and pilot light
	Panel Inset 16 & 27	As above	2 & 3 kW	Panel: 19½ × 21½ × 1⅛ Inset box: 16½ × 18½ × 4½	As above	As above but with switch
	Panel Inset 8 & 29	As above	2 & 3 kW	Panel: 19½ × 21½ × 1⅛ Inset box: 16½ × 18½ × 4½	As above	As above but without thermostat, pilot light and switch
	Standard Offset 13 & 32	Wall fixing Convector	2 & 3 kW	19½ × 21½ × 5½	Wa or Be with Al louvres	Easily attached to any wall. Has thermostat and pilot light
	Standard Offset 17 & 33	As above	2 & 3 kW	19½ × 21½ × 5½	As above	As above but with switch
	Standard Offset 14 & 34	As above	2 & 3 kW	19½ × 21½ × 5½	As above	As above but without thermostat, pilot light or switch
	Pixie 18 & 19	Offset wall fixing Convector	¾ & 1 kW	14½ × 12 × 4½	Be, St En	Easily attached to any wall
HURSEAL LTD.	Column F11	Floor and wall fitting radiator	½ kW	21 × 14 × 5½	C, B, Bl, Edn	Oil filled 3 column type. Fitted with built-in thermostat. Wall fitting reduces height by 2½ in. Towel rail attachments may be fitted
	Column F12	As above	1 kW	21 × 22 × 5½	As above	As above
	Column F15	As above	1½ kW	21 × 35 × 5½	As above	As above
	Column F16	As above	1½ kW	24 × 32 × 5½	As above	As above
	Column F17	As above	1½ kW	28 × 27 × 5½	As above	As above
	Column F18	As above	2 kW	21 × 45 × 5½	As above	As above
	Column F19	As above	2 kW	24 × 40 × 5½	As above	As above
	Column F20	As above	2 kW	28 × 35 × 5½	As above	As above
	Panel P1	As above	½ kW	18 × 31 × ¾	As above	Oil filled type. Fitted with built-in thermostat. Feet or brackets supplied. Towel rail attachments may be fitted.
	Panel P2	As above	½ kW	24 × 29 × ¾	As above	As above
	Panel P3	As above	1 kW	18 × 64 × ¾	As above	As above
	Panel P4	As above	1 kW	24 × 48 × ¾	As above	As above
	Panel P5	As above	1 kW	30 × 41 × ¾	As above	As above
	Panel P6	As above	1½ kW	18 × 93 × ¾	As above	As above
	Panel P7	As above	1½ kW	24 × 72 × ¾	As above	As above
	Panel P8	As above	1½ kW	30 × 60 × ¾	As above	As above
	Panel P9	As above	2 kW	30 × 79 × ¾	As above	As above
	Panel C	Wall fixing radiator	1 kW	18 × 69 × 1⅝	Priming coat only	Oil filled type. Fitted with thermal cut-out
H. G. POXON ENGINEERING LTD.	Herga 1116E	Wall fixing warming panel	150 watts	11 × 16 × 1¼	Br, but can be painted to match surroundings	The elements which are embedded in asbestos base resin bonded material are hermetically sealed in panels of insulating plastic. Panels are attached to wall by screws and spacers leaving clear space of 1¼ in between panel and wall. Lower edge should not be less than 3 in from floor. Advisable to fit horizontal deflector shelf about 2 in above top edge of panel and projecting 2 in beyond its face. Thermostatic control and indicator light may be fitted
	Herga 1515G	As above	200 watts	15 × 15 × 1¼	As above	As above
	Herga 1622N	As above	350 watts	16 × 22 × 1¼	As above	As above
STEEL RADIATORS LTD.	Stelrad 500 W24	Wall mounting radiator	¼ kW	25½ × 23½ × 1⅝	Be, C	Oil filled and having thermostatic control and red pilot light. May also be fitted with feet or castors
	Stelrad 1500 W30	As above	1½ kW	31½ × 52 × 1⅝	Be, C	As above
UNITY HEATING LTD.	Floodwarmth 1001 to 1012	Tubular wall mounting heater	60 watts per foot	2 in dia tube in lengths from 1 to 12 ft	Steel: DO Aluminium: Al	Made from either steel or aluminium. Can also be floor mounted if required. Two or more heaters may be fitted in banks
	Floodwarmth 1013 to 1017	As above	60 watts per foot	2 in dia tube in lengths from 13 to 17 ft	DO	Made from steel. Can also be floor mounted if required. Two or more heaters may be fitted in banks
	1812	Wall mounting panel	100 watts	12 × 24 × 1½	B, Gy, St En	Made in a steel casing with elements of the type used in the tubular heater. Fixed to the wall by a metal strap bolted or screwed to the wall. May also be ceiling mounted
	1813	As above	150 watts	12 × 36 × 1½	B, Gy, St En	As above
	1823	As above	300 watts	24 × 36 × 1½	B, Gy, St En	As above
	1824	As above	400 watts	24 × 48 × 1½	B, Gy, St En	As above
	1836	As above	1 kW	30 × 66 × 1½	B, Gy, St En	As above



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	V.80. Basic Type. for attachments to existing suspensions	**22/8** + 5/2 P.T.
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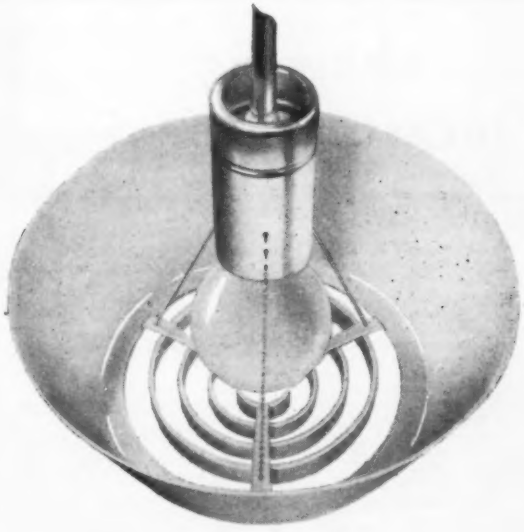
	V.86. Tubular Suspension Type	**30/8** + 6/11 P.T.



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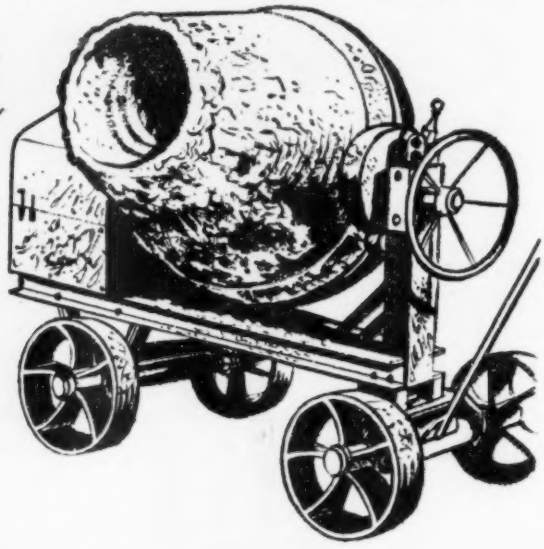

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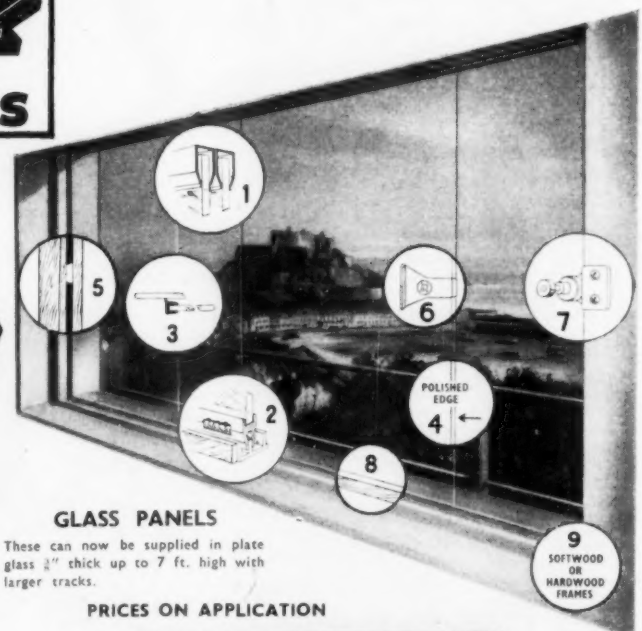

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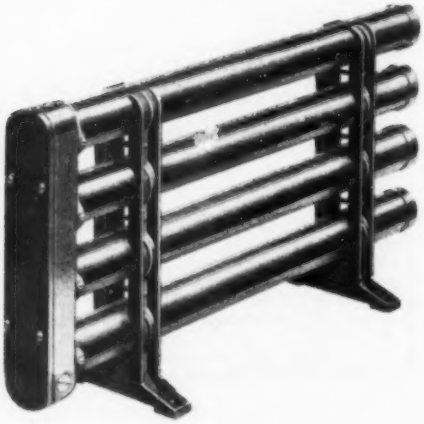
Electric Convector and Panel Heaters

Supplier	Name or Model	Type	Total Loading	Overall Dimensions H · W · D in inches	Finish	Remarks
UNITY HEATING LTD. (continued)	1863	Skirting board panel	60 watts per foot	6 · 36 · 1½	B, Gy, St En	Made in a steel casing with elements of the type used in the tubular heater. Fixed by means of holes in the backplate which is fitted flush to the wall and the front-plate is then screwed on
	1864	As above	As above	6 · 48 · 1½	B, Gy, St En	As above
	1865	As above	As above	6 · 60 · 1½	B, Gy, St En	As above
	1866	As above	As above	6 · 72 · 1½	B, Gy, St En	As above
	1893	As above	As above	9 · 36 · 1½	B, Gy, St En	As above
	1894	As above	As above	9 · 48 · 1½	B, Gy, St En	As above
	1895	As above	As above	9 · 60 · 1½	B, Gy, St En	As above
	1896	As above	As above	9 · 72 · 1½	B, Gy, St En	As above
	Conp 1911	Wall fixing convector	1 kW	24 · 27 · 5	B, Gy, St En	Although primarily portable this convector can be secured to the wall by means of slotted fixing holes in the back. Has thermostatic control and warm glow lamp. Also available without thermostat (No 1921)
	Conp 1912	As above	2 kW	24 · 27 · 5	B, Gy, St En	As above but No. 1922 without thermostat
	Conp 1913	As above	3 kW	28 · 30 · 5	B, Gy, St En	As above but No. 1923 without thermostat
	Cab 1935 & 1937	As above	1 & 2 kW	21½ · 20½ · 6¼	B, Gy, St En	Made in a steel casing with elements of the type used in the tubular heater. Fixed to the wall by metal lugs
	1951 & 1952	Inset convector	1 & 2 kW	Recessed casing: 20½ · 19½ · 5 Frontplate assembly: 24¼ · 23½ · ½	B, Gy, St En	The element complete with air flow baffles is mounted in a heavily constructed box for recessing. The frontplate is metal and fits flush to the framework. Elements of the type used in the tubular heater
WALSALL CONDUITS LTD.	Tubular Heater	Floor or wall fixing	60 watts per foot	2 to 17 ft long	Ch	Can be supplied in single tier or multi-tier units. Element is completely accessible at all times
WARDLE ENGINEERING LTD.	Tubular Heater	Floor or wall fixing	60 or 80 watts per ft	2⅜ in · 1 in Oval tube in lengths from 2 to 17 ft	Br, En	Supplied in single or multi-tiered units
	Oval tubular radiator	Floor mounting	120 watts per foot	8½ in · 2 to 6 ft · 3 in projection	—	Two-tier tubular type. May be fitted with foot switch
	Oval tubular radiator	As above	180 watts per foot	11½ in · 2 to 6 ft · 3 in projection	—	Three-tier tubular type. May be fitted with foot switch
YELSEN LTD.	601	Wall mounting radiator	54 watts per sq. ft	26½ · 25 · 3¼	B, St En	Aircraft alloy construction. May also be floor standing and portable. Automatic pilot lighted heat control
	603	As above	54 watts per sq. ft	26½ · 34½ · 3¼	B, St En	As above
	606	As above	54 watts per sq. ft	26½ · 54½ · 3¼	B, St En	As above
	610	As above	54 watts per sq. ft	26½ · 75½ · 3¼	B, St En	As above

TUBULAR HEATERS

1



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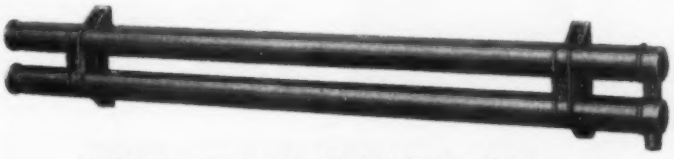
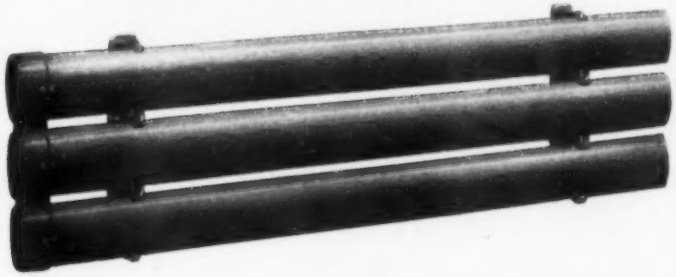


1. *Round section type by Walsall Conduits Ltd.*
2. *Round section type by Bescol Electric Ltd.*
3. *Oval section type by Wardle Engineering Co. Ltd.*

3



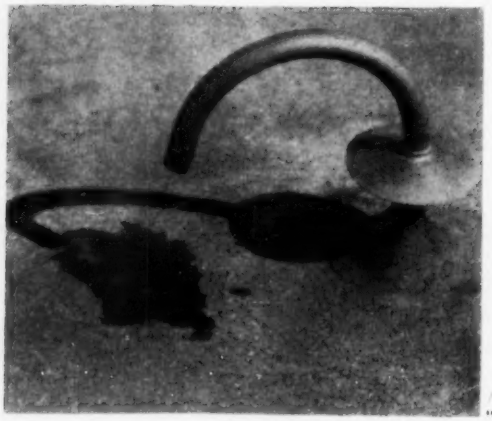
MOSAICS

SERVICES

ELECTRICAL ACCESSORIES

B5/52

A new fused connector-box No. 999 with earthing facilities has been produced by M. K. Electric Ltd., of Wakefield Street, London, N.18. It is suitable for clock points and other fixed appliances and for wiring on ring circuits and mounting in plaster-depth boxes, and deeper boxes to B.S. 1363: 1947. It will accommodate 7/.029in cable. The plate is styled to match the MK Plateswitch and has two 4 BA fixing screws on 2⅜in centres. The removable fuse-carrier is fitted with a 13 amp. cartridge fuse-link to B.S. 646: 1944 Type A. It is secured by an unobtrusive finger-nut. The fuse-carrier is provided with an adjustable flex cleat. Moulded throughout in track resisting urea.

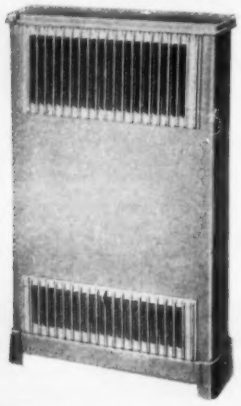


STRUCTURE

ROOFING

A10/11

A new aid to roof construction, The Parovent, has been produced by Paramount Asphalte Ltd., of 149 Kennington Park Road, London, S.E.11. It is a copper funnel which functions as a breather by exhausting accumulated air or water vapour trapped under the impervious roof membrane. A shield or cowl surrounds the funnel to prevent seepage of moisture between the funnel and collar of impervious material. Three different models are available for dissimilar types of roof.

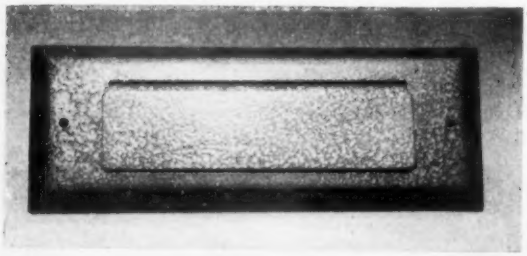


SERVICES

SPACE HEATING

B3/81

The Windsor gas convection radiator by W. Sugg & Co. Ltd., of Vincent Works, Regency Street, London, S.W.1, has been designed to give constant central heating in the halls of flats and houses. It has a rapid heat rise to counteract continual air changes and can be left on all day and night if necessary. Also suitable for installation in offices and shops. The top base and grilles are of cast iron and the body is of heavy gauge steel. Base lugs are provided for floor fixing. The gas rate is controlled by means of a screw operated needle valve and ignition is through the front base grille which is fitted with amber glass panel. Consumption: 18/20 cu ft per hour (C.V.500). Input: maximum 10,000 B.Th.U's per hour. Burners: 7 Bray "SG" burners No. 231. Gas connection: ¼in B.S.P. female thread, right or left hand connection. Finish: Gold or bronze with gold grilles. Dimensions: Height 30in, width 18½in, depth 6in.



FITTINGS

DOOR FURNITURE

C3/20

The Netador internal draught excluder is manufactured by Efecto Engineering Co. Ltd., and sole concessionaires are John G. Wood & Co., of Jonwood Works, New Barnet, Herts. It is designed to remedy the unsightly internal appearance of the postal aperture of the front door and at the same time to exclude draughts. It is fixed with two screws and will give entry to letters and newspapers: it closes automatically. Made of steel it is available in bronze, cream, silver or blue finish or in dual colour schemes on a cream background.

INDUSTRIAL NOTES

● Free training in the correct installation of modern fires, stoves, cookers, and other domestic solid-fuel appliances will be available to Yorkshire builders' operatives at the Coal Utilisation Council's new Technical Centre, at 99 Albion Street, Leeds.

● Following upon inspection by representatives of the Ministry of Fuel and Power, Carron Company, Carron, Falkirk, has been authorised by the Minister to conduct official Approval Tests for Domestic Solid Fuel Products—Fires, Cookers, and Openable Stoves. These tests will be carried out in the Research and Development Test House at Carron which is fully equipped for this exacting work. The work entails the measurement to a high standard of radiant heat, fuel consumption, boiler output, amounts of convection, and many other factors.

● Preservation and hardening of oak tracery windows at the Old Grammar School, King's Norton, has been carried out by treatment with Xylamon. This wood preservative has been used in famous buildings all over the world, including the Palace of Versailles and St. Stephen's Cathedral, Vienna. The preservative, which has also been used in the Merchant Adventurers' Hall, York, and at the Mersey Docks, is claimed to destroy fungi and wood-boring insects at every stage of their development. It penetrates rapidly and it is said that only a few minutes' immersion makes the heaviest timber immune, and it can be painted, polished or lacquered.

● Acrow (Canada) Limited, a subsidiary of the Acrow Group, is setting up a plant and housing scheme on a 250-acre site at Orangeville, Ontario, which, when in full production, will manufacture the entire range of Acrow equipment.

● During 1955 over eight million one hundred thousand tons of cement were delivered by The Blue Circle Group of Companies from works in this country. This exceeds last year's record figure by 330,000 tons.

● Rooster Publicity Ltd. are now J. Peers and Associates Ltd., at Summit House, 1 and 2 Langham Place, London, W.1. Telephone: Langham 8434.

● For the fourth successive year, steel ingot production of the United Steel Companies, Limited, has set a new record. In 1955 the company produced 2,584,891 tons, beating the 1954 output of 2,492,756 tons by 92,135 tons.

● There is to be closer integration of the activities of Warerite Ltd. and the parent business of Bakelite Ltd. As from January 1st all Warerite materials will be sold by Bakelite Ltd., of 12 Grosvenor Gardens, London, S.W.1, and area sales offices.

We regret to announce the death, on 20th December, 1955, at the age of 71, of Mr. George Levy, Vice-Chairman since 1928 of George Cohen Sons & Co. Ltd., the parent concern of the "600" Group of Companies. For many years he played a very active part in the development and administration of the George Cohen organisation.

MARLEY

YEOMAN TILES

Quickly and easily laid

Light in weight

Economise timber

TECHNICAL DATA							
Gauge	Lap	No. of Tiles		Feet Run of Batten		Approx. Weight of Tiling in lb.	
		per sq.	per sq. yard	per sq.	per sq. yard	per sq.	per sq. yard
13½"	3"	92.5	8.3	90	8.1	1,000	90
12½"	4"	100	9.0	98	8.8	1,100	99
11½"	5"	109	9.8	107	9.6	1,200	108

Yeoman tiles have a variable gauge which should be utilised to avoid cutting tiles at top courses.

Send for full details and specifications.

All Marley tiles are surfaced with coloured mineral granules which ensure natural weathering and beauty. And all Marley tiles are covered by the Marley dual guarantee: (1) That Marley tiles will not laminate or decay for 50 years. (2) Free maintenance of roof tiling fixed by Marley craftsmen for ten years.

"Not for an age—but for all time"

The Marley Tile Company Ltd., Riverhead, Sevenoaks, Kent. Sevenoaks, 2251-6 **MARLEY**

Scotland: *Bishopbriggs* 1093 **Wales:** *Pencoed* 376 **Northern Ireland:** *Belfast* 24447 **Eire:** *Dublin* 51794

G

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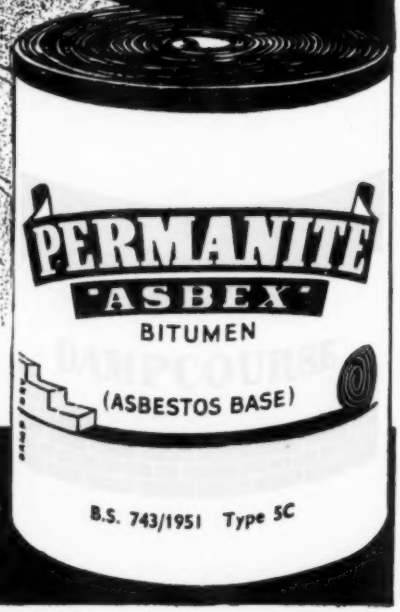


PERMANITE LIMITED
455 OLD FORD ROAD LONDON E 3
Telephone : ADVance 4477 (11 lines) Est. 1909

ELECTRIC LIGHTING

INDUSTRIAL INTERIORS

Although the illumination required for industrial purposes covers a very wide range, the specified values can be reduced to comparatively few groups which cover the whole range of likely industrial activities. The reason for this is that significant increases in visual acuity require an illumination increase of at least 50% and, at the higher levels, 100%. Thus, for instance, while an increase from 10 to 15 lm./sq. ft. gives a significant improvement in visibility at that level of illumination, an increase from 100 to 200 lm./sq. ft. is required to give an equally significant improvement at the higher level of illumination, i.e. for finer work.

The Illuminating Engineering Society's Code for the Lighting of Building Interiors gives illumination values for a wide range of industrial processes related to their relative visual demands. Table 1, based on this Code, is a guide to the application of the basic illumination levels for each category of operations or processes.

Essential Requirements

The lighting installation must satisfy the following requirements which are set out in order of priority :

(a) Sufficient and suitable light on the work, having regard to the size, contrast and movement involved, and the angle of elevation of the work face — i.e. horizontal, vertical, or an intermediate angle.

(b) Sufficient and reasonably uniform general illumination to provide safe and easy movement of operatives and goods, and to prevent excessive illumination differences between working points and other areas.

(c) Brightness of general surroundings, ceilings, walls, machinery, benches, etc., to provide a cheerful environment, to reduce contrast between light sources and backgrounds, and to prevent the formation of strong shadows.

(d) The selection, placing and control of light sources to enable natural lighting to be supplemented by artificial lighting when necessary, in order to ensure optimum visual conditions throughout the factory at all times.

Ideally, the satisfaction of these requirements necessitates the planning of the artificial lighting in conjunction with the natural lighting, and it is only by taking into account the characteristics of each as they affect the efficiency of the building as a whole, that the most satisfactory results can be obtained.

General Lighting — Filament Lamps

The great majority of industrial lighting fittings are of the reflector type (see L.2) and for medium illumination values up to 30 lm./sq. ft. they are usually arranged in a symmetrical pattern as far as conditions permit, the maximum permissible spacing being determined by the distribution characteristics of the reflectors used. The maximum spacing of dispersive reflectors is 1½ times their height above the working plane ; for concentrating reflectors it is equal to their height above this datum, which is usually taken at 2′ 6″ from the floor. The distance between end reflectors and walls should not exceed half their normal spacing. Spacing may be reduced or fittings may be raised with advantage in many cases, but if the fittings are lowered without a corresponding reduction in the spacing, the illumination will become patchy.

TABLE 1 ILLUMINATION REQUIREMENTS

Nature of Work Process or Material	Illumination (Lm./sq.ft.)	Typical Processes	*Typical Locations
Rough or routine work. Large detail. Medium to light material of good contrast.	7	Fuel handling. Rough foundry work and forging. Non-critical machine supervision. General maintenance. Stores, packing and dispatch. Tile and brick making.	Coal and ash handling plants. Bulk stores. Dyeing shops. Packing rooms. Boiler, battery, switch, etc. rooms. Smiths' shops. Casting and charging floors. Saw mills.
As above but work rather more skilled or critical.	10	Buffing, polishing. Type casting. Rough core making, moulding and casting. Warping and winding (Cotton).	Plating & Tinning Shops. Rolling Mills. Cotton warping sheds. Carpet finishing sheds.
Ordinary work usually involving workers' inspection. Medium detail and contrast.	15	Ordinary assembly and inspection; trimming, finishing, painting. Bench and machine work. Pattern making. Knitting machines. Clothing stores and despatch.	Clothing stockrooms. Medical centres. Dairies. Food preparation floors. Flour mills. General paint shops. Turbine halls. Heavy erection and machine shops. Wool preparation sheds.
Fairly critical work, fairly small detail or poor contrast.	20	Medium inspection. Fine core making and moulding. Cotton and rayon weaving, light colours. Garage repairs. Laundry work. Printing machine operation. Fairly small bench and machine work. Rough grinding.	Cabinet making shops. General machine, fitting and assembly shops. Sorting areas. Repair shops. Laboratories. Laundries. Printing works, monotype, linotype, and composing rooms. Wool warping sheds. General offices.
Skilled work small detail, or dark material.	30	Medium assembly. Hand typesetting (up to 6 pt.). Sewing—dark work. Fine painting and finishing. Weaving—fine woollens, dark cotton and rayon.	Medium weaving sheds —woollen. Cutting, sewing and garment-making rooms. Boot and shoe machine rooms. Drawing offices.

(continued overleaf)

Table 1 (Illumination requirements)—*continued from page 1*

Nature of Work Process or Material	Illumination (Lm./sq.ft.)	Typical Processes	*Typical Locations
Fine, or critical work, very small detail, very poor contrast or very dark material.	50	Small inspection and assembly. Grading (flour etc.). Textile mending and inspection (dark). Engraving. Medium instrument work. Fine worsted weaving. Small bench and machine work. Medium grinding.	Food inspection and grading rooms. Stone and machine engraving rooms. Tool rooms. Burling and mending rooms.
Very fine, exacting work.	100	Very small assembly inspection, bench and machine work. Die sinking. Watch, jewellery and instrument making.	Precision equipment works.
Minute work	200	Minute inspection and assembly, bench and machine work.	

**Typical locations shown are those in which symmetrical or localised general illumination of the recommended values would normally be provided. In areas where processes are mixed, or the illumination required is very high, general lighting of an intermediate value may be provided with supplementary localised or local lighting for the more exacting visual tasks.*

TABLE 2 MINIMUM MOUNTING HEIGHTS

of Tungsten filament lamps in open industrial fittings

Wattage	Minimum mounting height above floor
60	8 feet
100	9 ,,
150	9 ,,
200	10½ ,,
300	12 ,,
500	14 ,,
750	17 ,,
1,000	20 ,,
1,500	24 ,,

Note: *If, for special reasons, lamps are mounted lower than the heights given above, diffusing cover glasses or other suitable means should be employed to reduce the intrinsic brightness of the light sources.*

Table 2 gives the minimum height of lighting fittings in relation to the wattages of tungsten filament lamps.

General Lighting — Fluorescent Lamps

Fluorescent lighting layouts very often take the form of rows of fittings placed end to end. The light distribution from fluorescent fittings more than 5′ above the working plane, is similar to that from dispersive reflectors using tungsten filament lamps; the maximum spacing/mounting height ratio of 1½ to 1 applies to the spacing of the rows, however close the longitudinal spacing of the lamps may be. The maximum distance of the end rows or fittings from walls should, in this case, be half the distance between the rows of fittings. With fluorescent fittings the longitudinal spacing is measured from the lamp centres; the minimum spacing is therefore the length of the individual fittings, unless they overlap.

General Localised Lighting

Where the working areas are well defined and require medium to high uniform illumination (such as continuous benches, conveyors, machine lines, etc.) the general lighting may be localised with respect to these areas, at just sufficient height to light adequately the gangways and other less critical areas by their "overspill". Fluorescent lightings lend themselves admirably to this arrangement by virtue of their low heat radiation, low brightness and linear form. Lighting fittings used in this way should give a good proportion of upward light to help in offsetting the higher diversity of illumination, as well as for reasons already given.

Local Lighting

Where very high values of illumination are required for individual tasks tungsten filament or fluorescent local lighting may be provided *as a supplement* to the general lighting. Such local illumination should never exceed the square of the illumination in the same interior as measured in lumens per square foot.

Where complete benches, conveyors, or machine lines require such high values (of the order of 50 lm./ft.² or more) the local lighting may take the form of deep-skirted fluorescent reflectors suspended over, or frame-mounted on, benches, etc., in continuous lines at the lowest convenient height. The shielding must be sufficient to conceal completely from direct view the lamps nearest the worker. Provision for escape of light upwards will greatly assist the general lighting; but where the tops of fittings are less than about 5′ 6″ from the floor, and top openings would be visible to people standing or walking, closed-top fittings should be used.

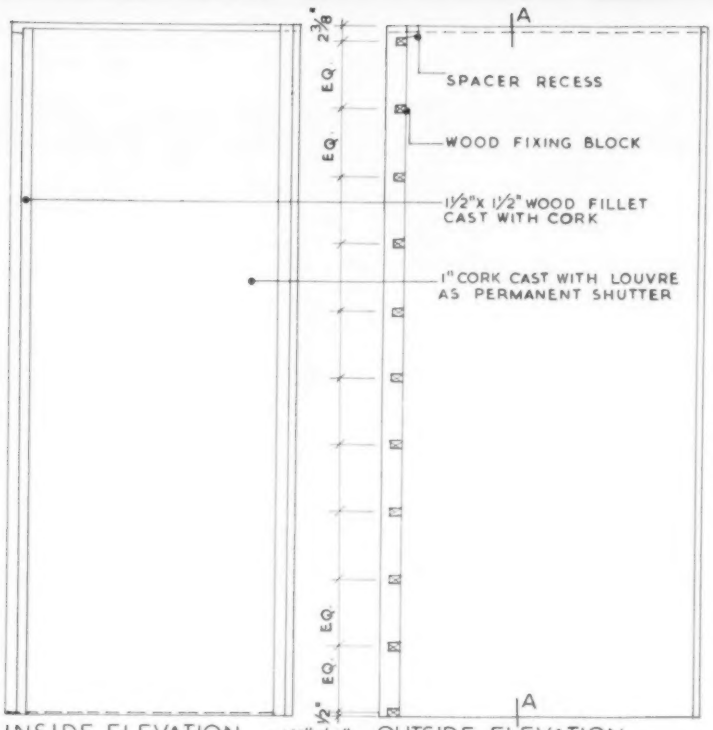
Uniformity Not Necessarily Essential

The foregoing lighting arrangements will satisfy most industrial conditions, but many variations are possible, and often necessary. Absolute symmetry or uniformity of illumination is not necessarily required so long as variations in illumination levels are not noticeably large. In general, the provision of ample illuminations on walls, ceilings and the sides of machinery and plant will permit of considerable diversity of illumination over the main working area, without ill effects.

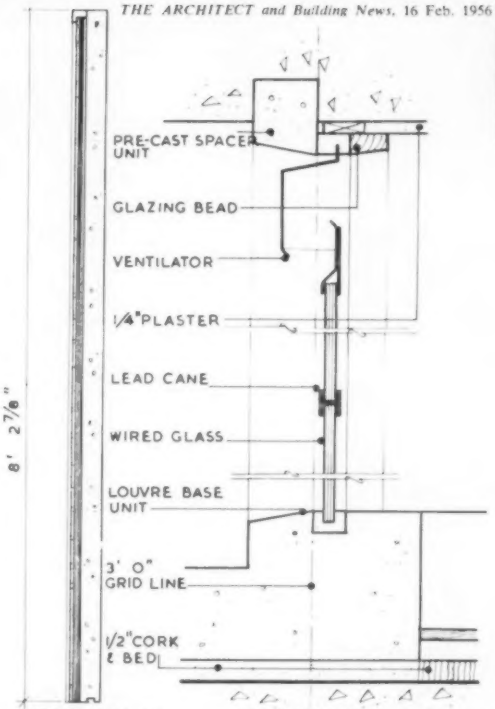
For further information apply to

L.5 British Electrical Development Association

2 *Savoy Hill, London, W.C.2. Temple Bar* 9434.

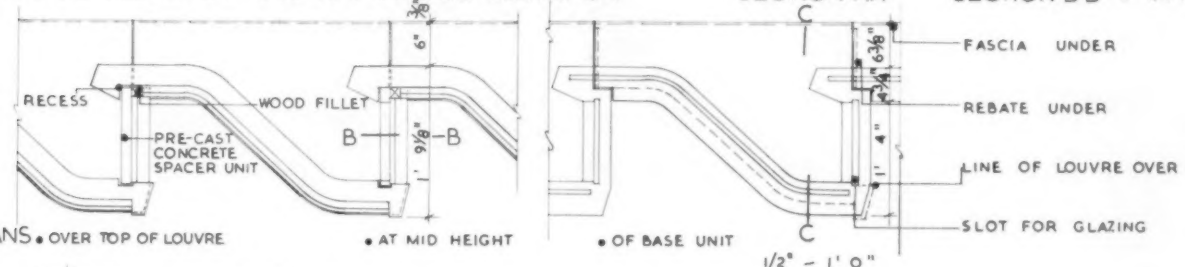


INSIDE ELEVATION • 1/2" - 1'0" • OUTSIDE ELEVATION



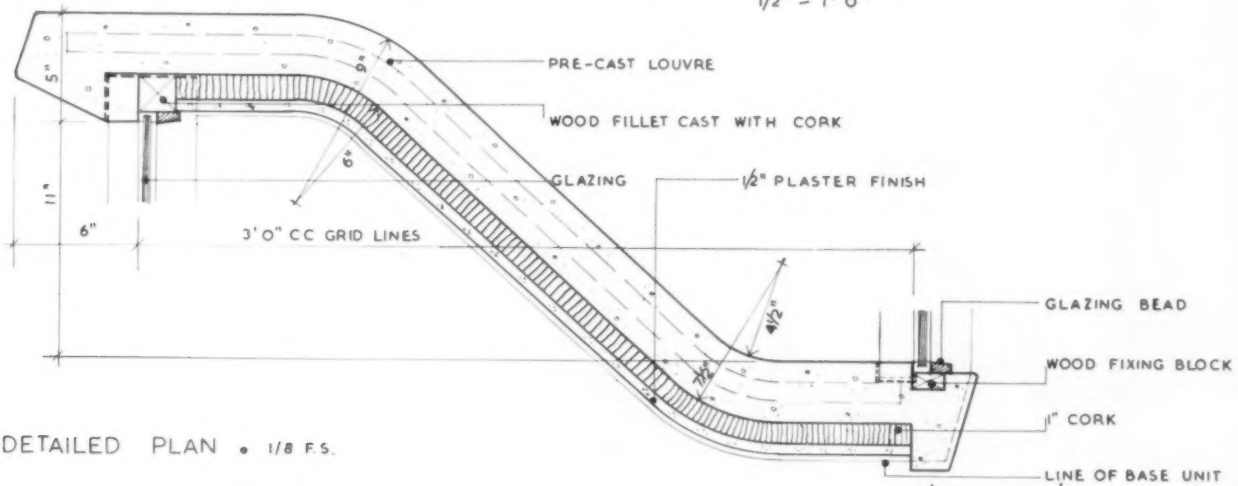
SECTION A-A

SECTION B-B • 1/4 F.S.

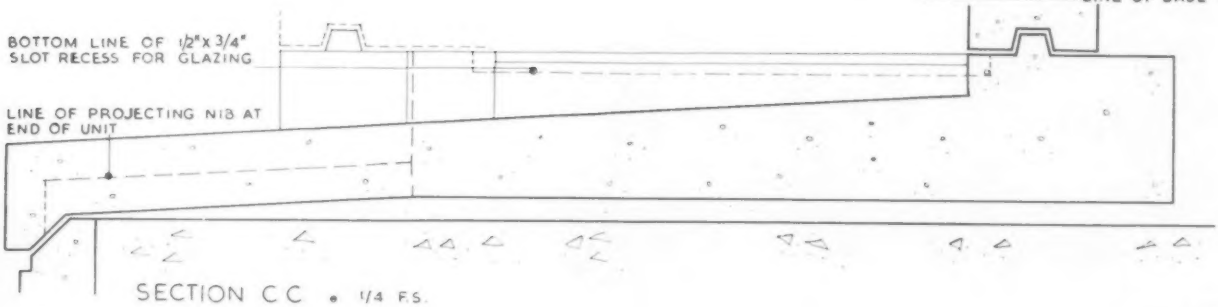


PLANS • OVER TOP OF LOUVRE • AT MID HEIGHT • OF BASE UNIT

1/2" - 1' 0"



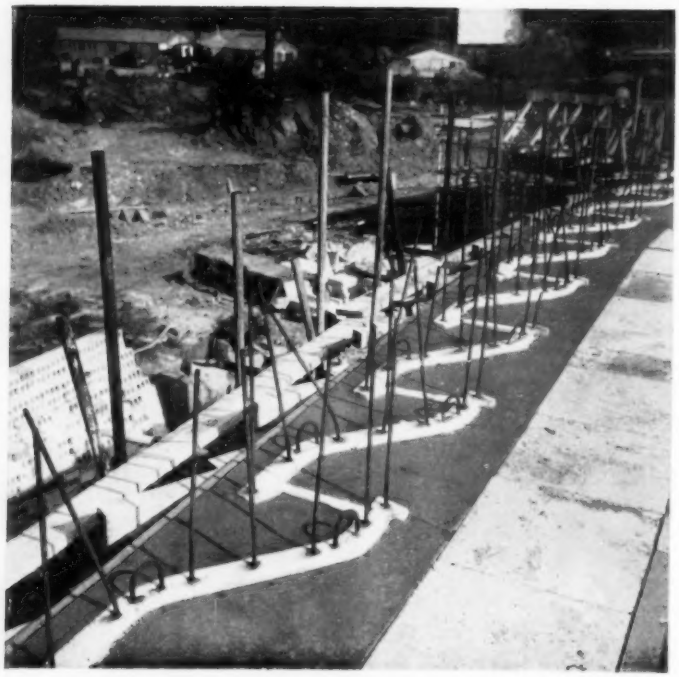
DETAILED PLAN • 1/8 F.S.

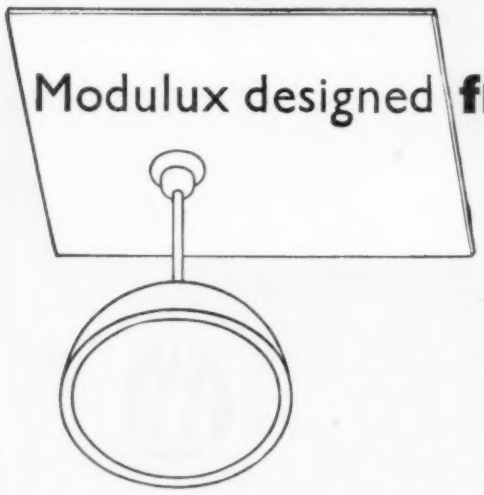


SECTION C C • 1/4 F.S.

LOUVRES, ADMINISTRATION CORRIDOR
SCHOOL AT PADDINGTON

ARCHITECTS: DRAKE & LASDUN





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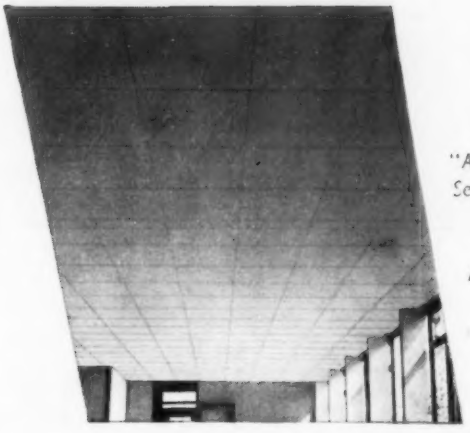
Data Sheet A.S.2 gives fixing and other details for steel framed multi-storey buildings where distances between beams necessitate subsidiary grids for panel suspension. Data Sheet A.S.3 is related to a 40-inch planning module. Write for your copies.



"Asbestolux" ceiling at the Chaddesden Secondary Modern School, Derby. (40" module)

Architects: Architects Co-Partnership

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Contractors: Messrs. Dwyer & Daly Ltd., Dublin.

Sizes: 12" x 12", 36" x 12", 36" x 6", 9" x 9", 6" x 6". Special sizes cut to order up to maximum of 36" x 12". Thickness: 3/16" square edge or bevelled edge. 5/16" tongued and grooved or square edge. Shades: Light, Medium, Dark. Coved Skirting: 5/16" thick, in lengths of 36", 4" high, ¼" radius cove.

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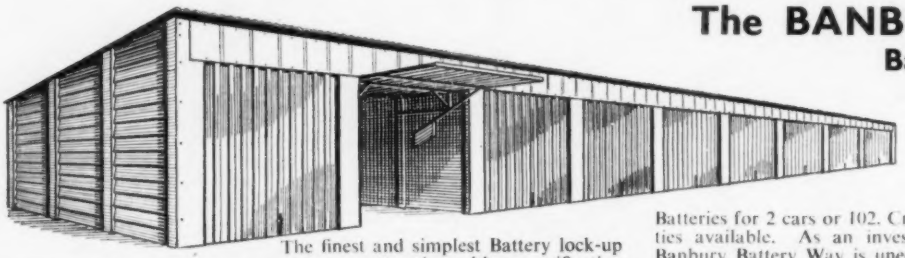

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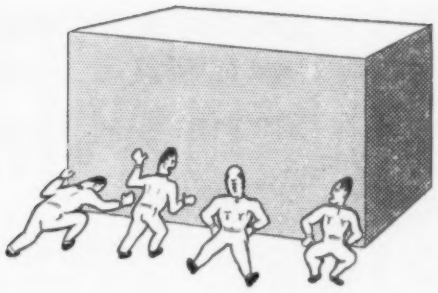

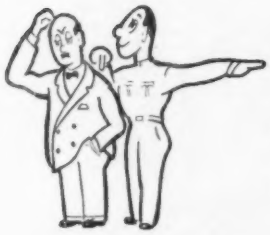

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This exhibition, demonstrating the enormous strides made in handling techniques, is of world-wide importance to all concerned with production —with the achievement of higher output for less cost and effort. At the Convention, experts from many countries will explain their methods for speeding production. Decide now to visit this vital event. Make your plans today and mail the coupon below for fuller details.

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Over 400,000 square feet of space, showing every type of equipment, large and small, from a simple trolley to elaborate coal-handling gear and ingenious bottling plant.

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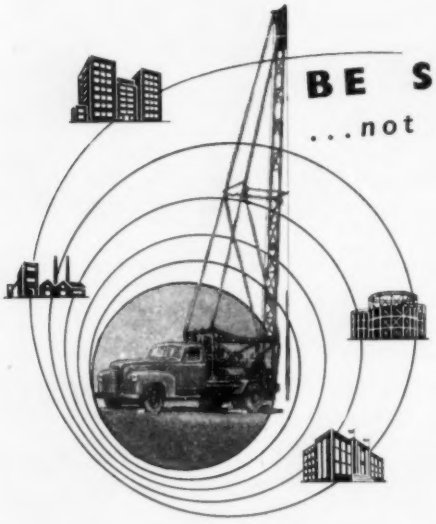

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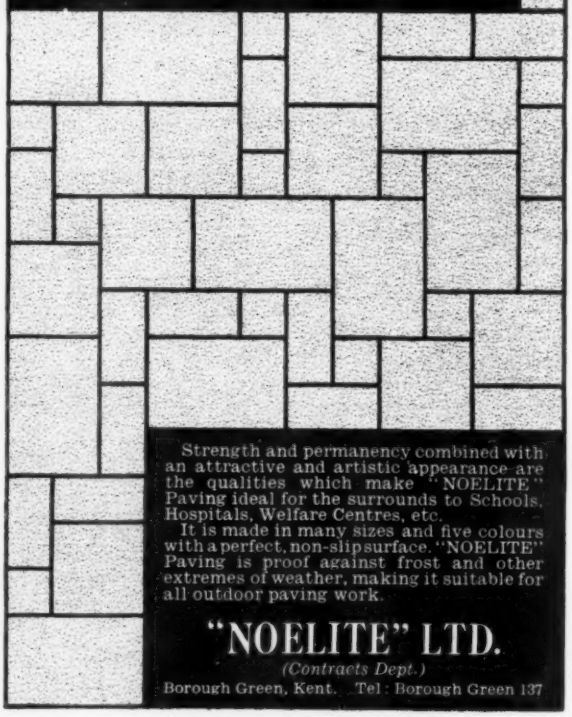

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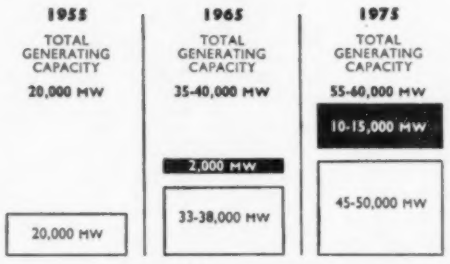

20 years' development programme

Britain's nuclear power station construction programme provides for twelve such stations to be built at a cost of some £300 million in the next ten years.

The First Ten Years

Work will start on the first two nuclear power stations in 1957. These will each have two gas-cooled reactors and the stations will be in operation by 1960/61. Two further gas-cooled reactor stations — each housing two reactors of improved type — to be begun in 1958/9 will come into service by 1963. The output of these four stations will be between 400,000 and 800,000 kilowatts.

The construction of two groups of four stations each will begin in 1960 and 1961/2 and they will be supplying electricity to the Grid by 1963/4 and 1965 respectively. The first group of stations will probably have one gas-cooled reactor each. The second group will probably utilise liquid-cooled reactors — one high rated reactor each. These stations will add well over 1,000,000 kilowatts to the nation's power resources.

The Second Ten Years

By 1975, it is anticipated that nuclear reactor power stations in Britain will have an aggregate installed capacity of between 10,000,000 and 15,000,000 kilowatts; and about half the national consumption of electricity will be derived from nuclear energy.

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7 YEARS' PROGRESS 50 NEW POWER STATIONS
10,000,000 ADDITIONAL HORSEPOWER INSTALLED

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APPOINTMENTS

The engagement of persons answering these advertisements must be made through the local office of the Ministry of Labour and National Service, etc., if the applicant is a man aged 18-64 or a woman aged 18-59 inclusive, unless he or she or the employer is excepted from the provisions of The Notification of Vacancies Order, 1952.

IMPERIAL CHEMICAL INDUSTRIES LIMITED

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invites applications from

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to fill the following permanent positions

1. Senior Design Draughtsman with experience of heavy hydraulics, e.g. design and installation of extrusion presses, pumps, accumulators, pipework, valves, etc., operating at working pressures of up to 5000 p.s.i. H.N.C. qualifications preferred but sound practical knowledge essential.
2. Senior Design Draughtsman with good general knowledge of layout and design of mechanical plant, e.g. rolling mills and ancilliaries, drawbenches, special purpose plant, materials handling equipment, etc. Work is widely varied and interesting. H.N.C. qualification preferred but sound design exeperience essential.
3. Senior Design Draughtsman with experience of the layout and design of heating and ventilating installations for industrial buildings including offices. A.M.I.H. & V.E. or equivalent qualification preferred.
4. Senior Design Draughtsman for interesting layout and design work connected with instrument installations applied to a wide range of plant producing non-ferrous metals. Experience to include working knowledge of electronics, electric and pneumatic control systems. H.N.C. qualification preferred.
5. Senior Design Draughtsman Electrical experienced in layout of industrial power distribution, automatic control gear and sub-station work. Knowledge of lighting installations an advantage. Work is interesting, covering a wide range of plant and buildings connected with the production of non-ferrous metals. H.N.C. qualification preferred.
6. Senior Design Draughtsman for general design work connected with gas and oil fired furnaces and auxiliary equipment. H.N.C. qualification preferred.
7. Senior Design Draughtsman with good knowledge of pipework layout and detail for steam, water, gas and air services to buildings and plant. H.N.C. qualification preferred.
8. Junior Draughtsman for general mechanical design and detail work with special reference to safety requirements. Previous experience in this field not essential. The post offers excellent opportunities for gaining experience of a wide range of plant. H.N.C. qualification preferred.

These positions carry good commencing salary and there are excellent prospects for advancement for men with initiative and ability.

Financial assistance towards removal expenses are available for married men. Excellent conditions of employment include Staff Pension Fund, Employees' Profit Sharing Scheme, etc. Application forms may be obtained from the Staff Manager, I.C.I. Metals Division, Kynoch Works, Witton, Birmingham 6, quoting DR/3/P.

[1993

WEST SUSSEX COUNTY COUNCIL

COUNTY ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments:—

(1) SENIOR ASSISTANT ARCHITECTS, Grade V A.P.T. Division (£795 - £970). **Commencing salary according to experience.**

(2) ASSISTANT ARCHITECT, Grade IV A.P.T. Division £710 - £885). **Commencing salary according to experience.**

(3) ASSISTANT ARCHITECT, Grade III A.P.T. Division (£690 - £815 if Associates R.I.B.A. and £640 - £765 if not Associates). **Commencing salary according to experience.**

Further particulars should be obtained from the County Architect, County Hall, Chichester, to whom all detailed applications must be submitted not later than 27th February 1956.

T. C. HAYWARD
Clerk of the County Council.

County Hall,
Chichester.
25th January 1956 [2020

COUNTY BOROUGH OF DERBY

BOROUGH ARCHITECT'S DEPARTMENT

Architectural Staff

(a) A.P.T. Grade IV. (£710 - £885 per annum)
(b) A.P.T. Grade III. (£640 - £765 per annum)
(c) A.P.T. Grade II. (£595 - £675 per annum)
(d) A.P.T. Grade I. (£530 - £610 per annum)
(e) Higher General Division (£180 - £500 per annum)

Quantity Surveying Staff

(f) A.P.T. Grade V. (£795 - £970 per annum)
(g) A.P.T. Grade III. (£640 - £765 per annum)
(h) A.P.T. Grade II. (£595 - £675 per annum)

Commencing salary will be according to qualifications and experience.

Permanent superannuable appointments, subject to one month's notice and to medical examination.

National Conditions of Service.

Applicants must state for which post they are applying.

Further particulars and application forms obtainable from and to be returned to The Borough Architect, The Council House, Corporation Street, Derby, not later than Monday, 23rd February, 1956.

G. H. EMLYN JONES,
Town Clerk.

26th January, 1956. [2014

POSTS OF TEMPORARY ARCHITECT, GRADE I, IN THE DEPARTMENT OF PUBLIC WORKS, CEYLON.

APPLICATIONS are invited for posts of Temporary Architects in the Department of Public Works, Ceylon on the scale of Rs.8,400 — 10 of 4880 and 4 of 600 - Rs.15,600 per annum for Indians and Pakistanis and £.600 — 12 of 30 and 6 of 40 — £.1,200 per annum for non-Ceylonese other than Indians and Pakistanis.

2. Further particulars may be obtained from the Office of the High Commissioner for Ceylon in the United Kingdom, 13, Hyde Park Gardens, London, W.2.

3. Applications for the above posts should reach the High Commissioner for Ceylon in the United Kingdom before 10th March, 1956.

[2012

WORTLEY RURAL DISTRICT COUNCIL
(POPULATION 45,000).

APPOINTMENT OF ASSISTANT ARCHITECT.

APPLICATIONS are invited for this appointment at a salary of £690 rising to £840 per annum. Housing accommodation available.

Forms of application may be obtained from the undersigned, to whom applications must be delivered not later than 1st March, 1956.

ADRIAN M. KELLY,
Clerk.

Council Offices,
Grenoside,
Near Sheffield. [2009

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HAVE VACANCIES IN THEIR ARCHITECTS DEPARTMENT for

ARCHITECTS, with Final R.I.B.A., and

ARCHITECTURAL ASSISTANTS of Intermediate and up to Final R.I.B.A. standard.

Salaries offered will be in proportion to age and experience and applications should be sent to:

H. S. SMITH, A.R.I.B.A.,
111, Westminster Bridge Rd.,
London, S.E.1.

[2015

STATES OF JERSEY

CIVIL SERVICE BOARD.

VACANCIES exist in the Engineer's Department of the States of Jersey for two qualified architectural assistants on a temporary basis. There is a possibility that the posts may eventually become permanent. Applicants should not be more than 35 years of age and must hold Associate Membership of the R.I.B.A., or equivalent qualification, and have had at least two years' general office experience. Salary £700, rising to £900.

Applications, giving full details of qualifications and experience, together with copies of two recent testimonials, should reach the Greffier of the States, States' Greffe, Jersey, C.I. not later than 29th February, 1956. [2015A

CAMBRIDGESHIRE COUNTY COUNCIL

COUNTY ARCHITECT'S DEPARTMENT

APPLICATIONS are invited for the following appointments:—

(a) One Quantity Surveyor. Grade V (£795/35/£970)
(b) One Assistant Quantity Surveyor. Grade II (£595/20/£675)
(c) One Engineer. Grade IV/V (£710/35/£970)
(d) One Architectural Assistant. Grade III (£640/25/765)

For appointment (a) applicants should be thoroughly experienced in the preparation of estimates, Bills of Quantities, Specification and settlement of final accounts, and should be Associate Members of the R.I.C.S. and for —

(b) Applicants should have had experience in Abstracting, Billing and site measurement. Preference will be given to Applicants who have passed the intermediate stage of the R.I.C.S.

(c) Applicants should be associate members of the Institute of Heating and Ventilating Engineers or hold equivalent qualifications, and should have had experience in the design, specification and supervision of contracts for heating, ventilating and lighting services in large public buildings.

(d) Applicants should be Registered Architects, and preference will be given to members of the R.I.B.A. They should have experience in the design and construction of public buildings, housing and modern schools; the preparation of specifications and of site supervision.

The appointments are subject to the Local Government Superannuation Acts, 1937 to 1953, the National Scheme of Conditions of Service, a satisfactory medical examination and termination by one month's notice on either side.

Applications, stating age, present salary, present and previous appointments, details of training and experience, together with one recent testimonial and the names and addresses of two referees, should be submitted to the undersigned not later than 22nd February, 1956.

CHARLES PHYTHIAN,
Clerk of the County Council.

Shire Hall
CAMBRIDGE.
30th January, 1956. [2016A

HEMEL HEMPSTEAD DEVELOPMENT CORPORATION

SENIOR ASSISTANT ARCHITECT Salary scale £715-835/p.a. Must be A.R.I.B.A. and experienced in commercial and/or domestic architecture.

Applications from persons with experience but not yet qualified for the Senior Assistant grade will be considered for appointment to another grade with slightly lower salary scale.

Conditions of service similar to those in Local Government.

Housing accommodation may be available.

Applications, endorsed "Vacancy No. 72", giving age, education, qualifications, and experience, and names of two referees, should reach the General Manager, Westbrook Hay, Hemel Hempstead, by 1st MARCH.

[2018

METROPOLITAN POLICE

ARCHITECTURAL Assistants required for unestablished appointments in New Works Branch of Chief Architect and Surveyors' Department, New Scotland Yard, S.W.1.

Rates of Pay:

Men: £463 10s. (age 21) x £20—£523 10s. x £25—£725. Women £463 10s. (age 21) x £15—£493 10s. x £20—£533 10s. x £25—£645.

Annual leave 24 days. Conditioned hours 45½ a week, overtime paid for 1½ hours a week.

Apply to Chief Clerk, Chief Architect and Surveyor's Department, New Scotland Yard, S.W.1.

[1930

LONDON COUNTY COUNCIL

ARCHITECTS DEPARTMENT

VACANCIES for Architect Grade III (up to £945), and Architectural Assistants (up to £783), for widespread construction programme which includes houses, blocks of flats, schools of all types, and various public and industrial buildings — Application forms and particulars from Architect, (AR/EK/A/3), The County Hall, S.E.1. (1189).

[0006

LONDON ELECTRICITY BOARD

CHIEF ENGINEER'S DEPARTMENT

ARCHITECTURAL DRAUGHTSMEN required in Architect's Section in Central London. Applicants should be neat draughtsmen and preferably have had several years experience in an architects office.

STRUCTURAL DRAUGHTSMAN required in Construction Branch in Central London. Applicants should have a knowledge of building construction requirements and some experience in detailing reinforced concrete or steel structures.

These posts are graded under Schedule "D" of the National Joint Board agreement as Grade 6 — £535 10s. 0d. to £661 10s. 0d. per annum, inclusive of London Allowance.

Application forms obtainable from Personnel Officer, 46/7, New Broad St., London, E.C.2. Please quote reference PER/V/2002/3/AA. [1948

LONDON ELECTRICITY BOARD

SENIOR DRAUGHTSMEN

APPLICATIONS are invited for two positions as Senior Draughtsman in the Board's Western Sub-Area, based initially in Central London.

Candidates should have a good general and technical education preferably with some workshop training. They must be conversant with the layout of switchgear, plant, and associated equipment for substations up to 11 kV. A knowledge of building and civil engineering design whilst not essential would be an advantage.

The posts are graded under Schedule 'D' of the National Joint Board agreement as Grade 5 — £672 to £777 per annum, inclusive of London Allowance.

Application forms from Personnel Officer, 46/7, New Broad St., London, E.C.2. Please quote ref: PER/V/2132/AA. [2022

EXAMINATIONS

I. A. A. S.

FORTHCOMING EXAMINATIONS

THE INCORPORATED ASSOCIATION OF ARCHITECTS AND SURVEYORS will hold the following examinations during the week beginning 4th June, 1956.

Quantity Surveyors' Section:
Intermediate grade. Final grade (Parts I and II). Direct Final grade.
Building Surveyors' Section: (Including Municipal).
Intermediate grade. Final grade (Parts I and II). Direct Final grade.
Land Surveyors' Section:
Intermediate grade. Final grade. Direct Final grade.
Fire Surveyors' Section:
Direct Associate grade (Parts I and II).

The examinations will be held in London, and at selected provincial centres. Applications from candidates for permission to sit, made on the prescribed form, must be received not later than Monday, 12th March, 1956.

Full information on application to the General Secretary, I.A.A.S., 29, Belgrave Square, London, S.W.1. [2010A

ARCHITECTURAL APPOINTMENTS VACANT

ARCHITECTURAL Assistants required in the office of the Architect, Eastern Region, King's Cross Station for work in connection with the Modernisation Plan. Applicants should be of Intermediate R.I.B.A. Standard. Salary according to age and experience. Concessional rail travel — five-day week, and permanency after probationary period.—Apply in writing to Chief Civil Engineer, British Railways (Eastern Region), King's Cross Station, London, N.1, giving full particulars as to age, education, training and experience. [2016

ARCHITECTURAL Assistants required for varied work. Intermediate and Final standard with at least two years office experience etc. salary required to Cordingley & McIntyre, Chartered Architects, Owengate, Durham. [2019

SENIOR Architectural Assistant required in North Midlands, capable of developing from sketch plan to completion. General practice including factory, hotel, shop, office and domestic work. Knowledge of Quantities advantageous. Salary £750 - £800.—Box No. 0087 c/o A. & B. N. [2013

COVENTRY Corporation requires Qualified Architects, Special Grade £650-775, revised scales pending. Housing accommodation may be available. Application forms etc., from Arthur Ling, Bull Yard, Coventry, returnable within 15 days of publication. [2011

MINISTRY of Works require Architectural Assistants, with 3 years' training, experience in architect's office and of Inter. R.I.B.A. standard. Prospects of promotion and permanency. State salary required, age, details of training and experience to Ministry of Works, W.G.10 (H), Abell House, John Islip St., S.W.1. [2003

ARCHITECTURAL Assistant required, up to intermediate standard, Westminster Office. Pension and Bonus scheme. 5-day week. Write stating experience, age and salary required to Box No. 0114 c/o A. & B. N. [0083

SENIOR Assistants with adequate experience and contemporary outlook urgently required in mixed practice in Cheltenham. Junior required at Intermediate level. Write stating experience and salary required to: J. M. Williams, A.R.I.B.A., 98, Bath Road, Cheltenham. [2006

ARCHITECTS' Co-partnership require qualified assistant with experience.—Write 44, Charlotte Street, London, W.1., or telephone Langham 5791. [0002

ARCHITECTS' Co-partnership require unmarried, qualified, experienced assistant in their Lagos office. Maximum tour 14 months. Flat provided.—Write 44, Charlotte Street, London, W.1., or telephone Langham 5791. [0001

ARCHITECTURAL assistants required immediately by a large industrial concern in the Midlands. Applications must be of R.I.B.A. Intermediate Standard, preferably with experience on industrial projects. Salary by arrangement. Apply with all particulars to Box No. 8705 c/o A. & B. N. [1949

SCHERRER and HICKS, 19 Cavendish Square, W.1. (Tel. Museum 1105) require immediately a number of architectural assistants with imagination and initiative. The work is varied and covers Research Laboratories, Offices, Housing and Schools. Five-day week. Salary by arrangement. [1920

ARCHITECTURAL Assistant required, qualified, with experience of running contracts. — Write full particulars to T. Mitchell & Partners, 20 Bedford Square, W.C.1. [0096

ASSISTANT Architect and Architectural Assistants required in City Office for work on important modern buildings. Sound knowledge of construction essential. Very good salaries paid to successful applicants. — Write or telephone, Campbell Jones and Sons, 9, Dowgate Hill, E.C.4. (Central 7748.) [1933

TAYLOR & YOUNG, Manchester require two architectural assistants interested in good class work; salary by arrangement according to experience. Apply in writing to 195, Oxford Road, Manchester 13. [1952

ARCHITECTURAL assistants, intermediate standard, required for work in architect's office on development and construction of factory extensions, also on proposed large new factories in North East London area. Positions offered are permanent with good opportunities and are pensionable. Modern welfare amenities. Apply Personnel Superintendent, The Edison Swan Electric Co. Ltd., Cosmos Works, Brimsdown, Enfield, Middlesex. [2002

BUCKINGHAMSHIRE firm of Architects within thirty miles of London, with a varied practice, require qualified Architectural Assistants. Five day week. Salary according to age and experience. — Please write giving full details to Box 8828, c/o A. & B.N. [1970

BUCKINGHAMSHIRE firm of Architects within thirty miles of London, with a varied practice, require qualified Quantity Surveyors. Five day week. Salary according to age and experience.—Please write giving full particulars to Box 8829 c/o A. & B. N. [1971

ASSISTANTS required to prepare sketch designs, working drawings and detailing for wide variety of projects. High standard of draughtsmanship essential. Previous office experience desirable. — Box No. 8853 c/o A. & B. N. [1974

JUNIOR Building Surveyor age 22-26, required for Architect's Office to prepare specifications, working drawings, etc.; principally concerned with maintenance and alteration to domestic and other properties, a good knowledge of building construction essential. Non-contributory pension scheme. — Apply in writing to the Personnel Manager, Albert E. Reed & Co., Ltd., Aylesford Paper Mills, Larkfield, Nr. Maidstone, Kent, stating age, qualifications and experience. [1983

YOUNG Architectural Draughtsman required by London firm. Must have had experience in Architect's office preferably on commercial buildings. Commencing salary about £400 per annum. Apply Box 8889 c/o A. & B. N. [1986

ORMAN AND PARTNERS require experienced Architectural Assistants for their offices in Guildford and London. Intermediate — RIBA standard preferred. Apply, stating age, experience and salary to 23A, High Street, Guildford, Surrey. Telephone 67688/9. [1995

ARCHITECTURAL APPOINTMENTS WANTED

A.R.I.B.A. requires change, senior post overseas preferred, M.E. or W. Indies.—Box 0013 c/o A&BN [2025

SERVICES OFFERED

SURVEYS: Sites and Buildings. — Allerton Studios, 14, Maley Avenue, London, S.E. 27. Gipsy Hill 3782. [0097

SITUATIONS VACANT

The engagement of persons answering these advertisements must be made through the local office of the Ministry of Labour and National Service, etc., if the applicant is a man aged 18-64 or a woman aged 18-59 inclusive, unless he or she or the employer is excepted from the provisions of The Notification of Vacancies Order, 1952.

CLERK of Works required for large Industrial project, including Laboratories and Office buildings, on outskirts of Leicester. Applications submitted in writing to Cecil Howitt & Partners, St. Andrew's House, Mansfield Road, Nottingham, stating age, experience, salary required, etc. [2008

FOR SALE

"CAN-TILE" — the liquid floor and wall coating for Canteens, Hospitals, Factories, Abattoirs, Toilets, Garages, etc. withstands traffic. Cost —20% of lino. — Write Dohm Ltd., 167, Victoria Street, London, S.W.1. 14 factories pulverising — saving industry money. [1975

STEEL trusses, ex stock:— 20ft span at £9 10s. each, 25ft span at £11 each; 30ft span at £16 15s. each. Also purlins, stanchions if required. —R. Smith (Horley) Ltd., Balcombe Road, Horley, Surrey. [1938

ALL hardwood mouldings, plain and embossed, embossed ornaments and dowels; send for catalogue and today's lowest trade prices.—Dareve's Moulding Mills, Ltd., 60 Pownall Road, Dalston, E.8. Clissold 1543/4. [0142

JOINTLESS composition flooring in attractive colour range—quotations free—Full particulars from the Liotex Asbestos Flooring Co., Ltd., 3 Corbetts Passage, London, S.E.16 (Dept. A), Bermondsey 4341-2-3. [0622

NEW standard eye-bolt fitting putlog couplers, 1s. 9d. each, in boxes of 200.— P. & P., 230 Hornchurch Road, Romford, Essex. Phone Hornchurch 7569. [1907

HARDCORE Walling Stone and Pitching delivered or collected from quarries at Fish Hill, near Broadway, Worcs., and Hornsicasow, near Bourton-on-the-Hill, Glos. Apply to Baillie Brind & Co., Ltd., Prudential Chambers, Banbury, Oxon. [0082

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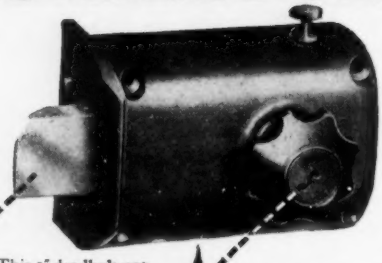

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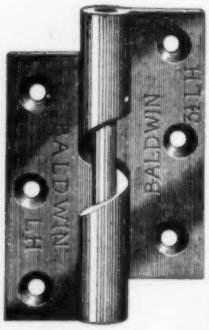

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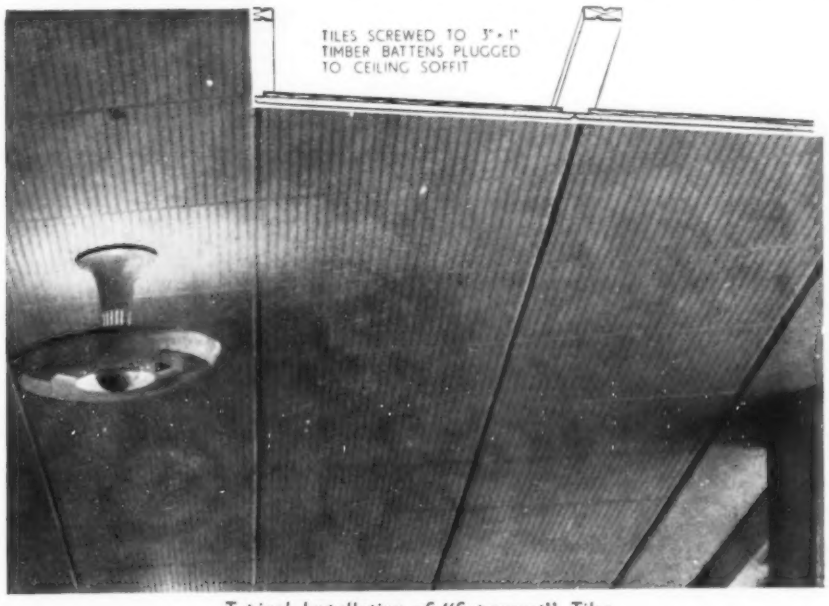

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Performance

Frequency (Cycles per second)	125	250	320	400	500	1000	2000	4000
SUPACOUST TILE with glassfibre quilt backing fixed on timber battens	0.25	0.55	0.65	0.65	0.60	0.35	0.25	0.20
SUPACOUST TILE with 1in wood wool backing	0.10	0.30	0.45	0.55	0.60	0.30	0.40	0.25
SUPACOUST TILE fixed direct on plaster board	0.15	0.10	*	*	0.20	0.35	0.50	0.60
SUPACOUST TILE left open at back	0.90	0.35	*	*	0.75	0.60	0.15	0.25

* Not tested at this frequency.

Sizes

Standards (supplied from stock) 24in x 24in x $\frac{5}{8}$in 24in x 12in x $\frac{5}{8}$in 30in x 15in x $\frac{5}{8}$in

Other sizes to specification.

Weight

Standard Tiles: 2$\frac{1}{2}$lb per sq. ft. If Vermiculite Plaster is used: 1$\frac{1}{2}$ — 2lb per sq. ft.

'Supacoust" tiles can be fixed to any surface by screwing. It is normal to fix only at the corners so that support for the standard panels is required only at 2ft 0in centres of say, 3in x 1in timber battens. Quotations will be gladly given for either (a) Supply to the Site only, for fixing by the General Contractor, or (b) Supply and fixing as a Subcontract.

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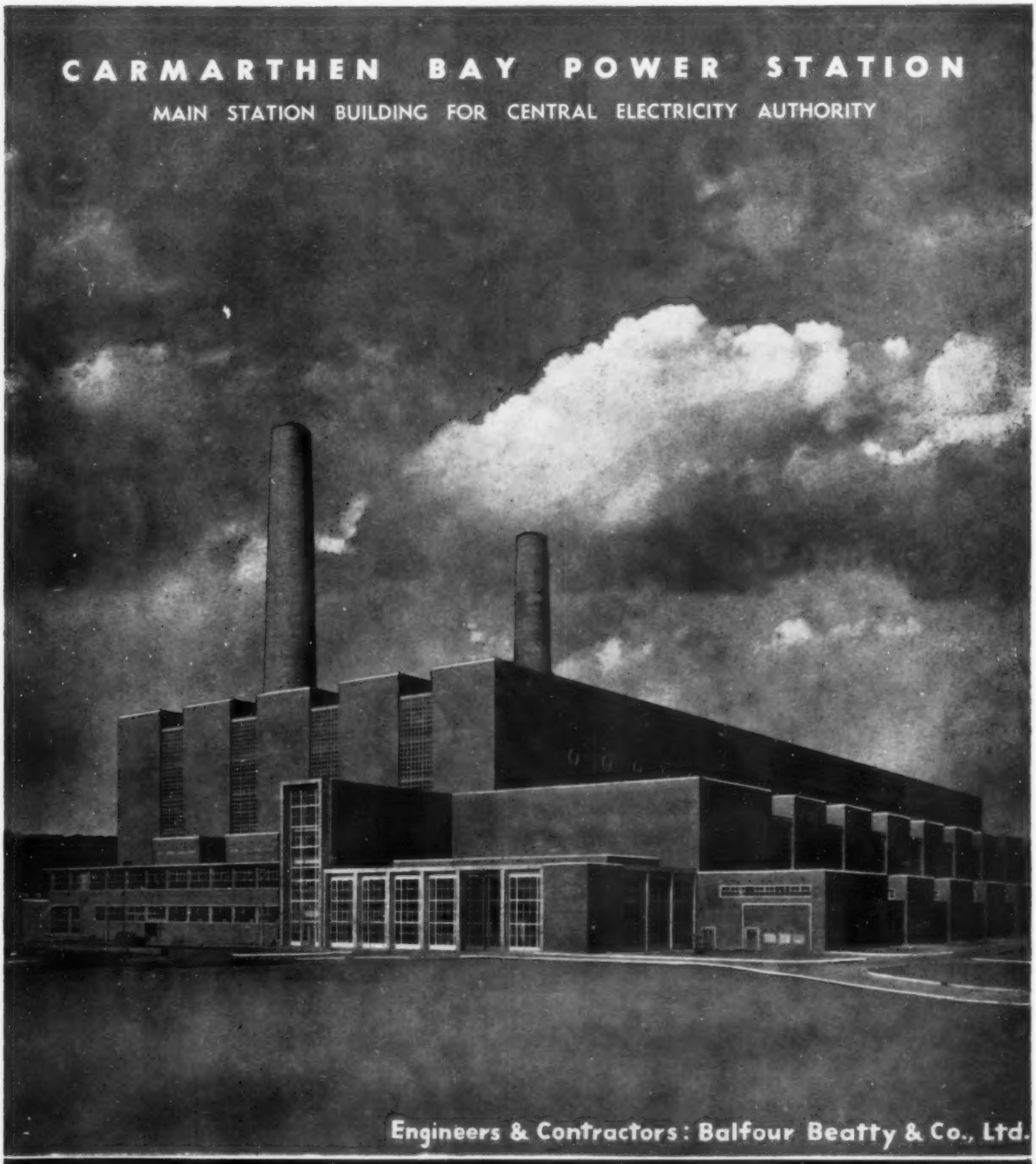

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